

Washington University School of Medicine

Digital Commons@Becker

Technical Reports

Institute for Biomedical Computing

2-1974

Macromodular Computer Design, Part 2, Volume 09, Faceplate Boxes, Types 5-10

Computer Systems Laboratory, Washington University

Follow this and additional works at: https://digitalcommons.wustl.edu/bcl_techreports

Recommended Citation

"Macromodular Computer Design, Part 2, Volume 09, Faceplate Boxes, Types 5-10," Computer Systems Laboratory, Washington University (1974). *Technical Reports*. Paper 14.
https://digitalcommons.wustl.edu/bcl_techreports/14

This Technical Report is brought to you for free and open access by the Institute for Biomedical Computing at Digital Commons@Becker. It has been accepted for inclusion in Technical Reports by an authorized administrator of Digital Commons@Becker. For more information, please contact vanam@wustl.edu.

MACROMODULAR
COMPUTER DESIGN
PART 2
MANUFACTURING DESCRIPTION

VOLUME IX
FACEPLATE BOXES, TYPES 5-10

Technical Report No. 38

FINAL REPORT - FEBRUARY, 1974
CONTRACT SD-302 (ARPA)

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR COMPUTER DESIGN
FINAL REPORT - CONTRACT SD-302
FEBRUARY, 1974

Technical Report No. 38

PART 2 - MANUFACTURING DESCRIPTION
VOL. IX-FACEPLATE BOXES, TYPES 5-10

This work has been supported by the Advanced Research Projects Agency of the Department of Defense under Contract SD-302 and by the Division of Research Facilities and Resources of the National Institutes of Health under Grant RR-00396.

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Advanced Research Projects Agency or the U.S. Government.

Computer Systems Laboratory
Washington University
St. Louis, Missouri

ABSTRACT

This document contains the necessary procedures and wiring lists for the assembly of Macro-Module Face-plate Box types 5 through 10.

INDEX

TYPE 5 FACEPLATE BOX

PAGES 305-1 thru 305-18

TYPE 6 FACEPLATE BOX

PAGES 306-1 thru 306-14

TYPE 7 FACEPLATE BOX

PAGES 307-1 thru 307-4

TYPE 8 FACEPLATE BOX

PAGES 308-1 thru 308-4

TYPE 9 FACEPLATE BOX

PAGES 309-1 thru 309-23

TYPE 10 FACEPLATE BOX

PAGES 310-1 thru 310-24

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY

305

TYPE 5 FACEPLATE BOX

PAGE	TITLE	CHANGE
305-1	TITLE PAGE	A
305-2	TYPE 5 FACEPLATE BOX PARTS LIST	A
305-3 305-4	TYPE 5 FACEPLATE BOX - INTRODUCTION AND ASSEMBLY PROCEDURE	A
305-5	TYPE 5 FPB ASSEMBLY	A
305-6	TYPE 5 FPB REAR CONNECTOR BLOCK-ASSEMBLY ORIENTATION	A
305-7	TYPE 5 FPB VISCERAL SUBASSEMBLY	A
305-8	TYPE 5 FPB INTERWIRING SUB-SUBASSEMBLY	
305-9	TYPE 5 FACEPLATE SUB-SUBASSEMBLY	
305-10 THRU 305-18	TYPE 5 FACEPLATE BOX WIRING LIST	

CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.
ISSUE	-	9/28/70	<i>DCJ</i>								
A	0059	10-20-70	<i>WLB</i>								

TYPE 5 FACEPLATE BOX

PARTS LIST

QTY.	C.S.L. DOC.	PART.
1	300.1	1-CELL FPB SHELL
1	300.5-11	TYPE 5 FACEPLATE
6	300.5-3	FPB CONNECTOR BRACKET SCREW
12	300.5-4	ASTRO STANDOFF
1	300.5-5	FPB KEY
2	300.0	FPB REAR CONNECTOR
3	300.0	ASTRO 348 REAR NUT
3	300.0	ASTRO 348 CONTACT RETENTION DISC
3	300.0	ASTRO 348 INTERFACIAL SEAL
111	300.0	ASTRO 348 MALE CONTACT
3	300.0	ASTRO RECEPTACLE SHELL
1	-	VLIER #NS-51N SPRING PLUNGER
3	-	NO.2 SERRATED-HOLE SOLDER LUG
28	-	3/16 X 2-56 FILLISTER HEAD SS MACHINE SCREW
-	300.0	WIRE (SEE 305-10 ff FOR COLOR CODE)
9	-	130 OHM 1/8 WATT 5% CARBON RESISTOR
1	-	1/16 X 1/4 CADMIUM PLATED STEEL ROLL PIN
2	300.5-2	FPB CONNECTOR BRACKET
1	300.5-12	FPB REAR CONNECTOR FILLER STRIP

CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.
ISSUE	-	9/28/70	<i>9201</i>								
A	0059	10-20-70	<i>1025</i>								

TYPE 5 FACEPLATE BOX

INTRODUCTION

This document (305) describes the assembly of the Type 5 Faceplate Box. A list of all required parts, including sub-assemblies specified in other documents, is given on page 305-2. The general specification on wire preparation and wiring procedures (CSL Document 300.0) must be followed, together with the color code information supplied by the Type 5 Faceplate Box Wiring List (pages 305-10 ff).

ASSEMBLY PROCEDURE

A. Type 5 Faceplate Sub-subassembly (see page 305-9)

1. Screw the spring plunger into the faceplate until the tip of the plunger protrudes from the front surface of the faceplate by approximately 0.090 inch.
2. Mount the three ASTRO 348 receptacle shells via the ASTRO standoffs to the faceplate as shown on page 305-9 using 2-56 fillister head screws. NOTE THE ORIENTATION REQUIRED.
3. Install the roll pin in the lower right corner hole as shown, flush with the rear surface of the faceplate (protruding from the front surface approximately 1/16 inch).

B. Type 5 FPB Interwiring Sub-subassembly (see page 305-8)

1. Connectors D1, D2 and D3
Following the Type 5 Faceplate Box Wiring List, crimp the wire pairs and the nine resistors into the ASTRO 348 male contacts and insert the contacts into designated contact retention discs (pin numbering is stamped in the receptacle shell). Apply the interfacial seals and slip on the rear nuts.
2. Wire to the FPB rear connectors A3, and A4, together with three solder-lug leads.

CHG.	E.C.O.	DATE	APPR.
Issue	-	9/28/70	<i>mcj</i>

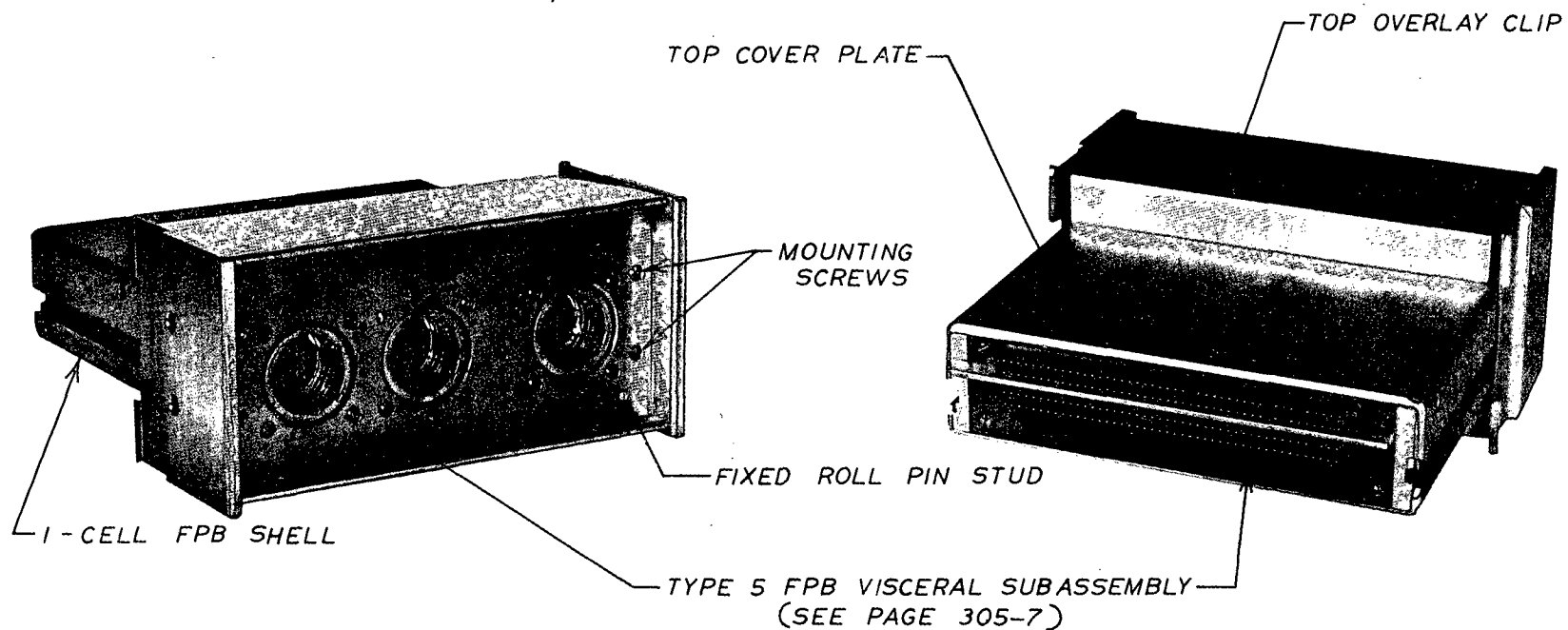
C. Type 5 Visceral Subassembly (see page 305-7)

1. Mount the FPB rear connector filler strip on the two connector brackets with connector bracket screws, as shown on page (305-6). Note that the row of holes is not centered on the bracket. The bracket edge closest to the row of holes must face inward (towards the connector pins). NOTE CONNECTOR ORIENTATION REQUIRED.
2. Install the contact retention disc cable-head assemblies in the corresponding receptacle shells for D1, D2 and D3 (shown on page 305-9) and hand-tighten the ASTRO 348 Rear Nuts.
3. Attach the solder lugs to the receptacle shells as shown.
4. Mount FPB Rear Connector A4 to the connector brackets using connector bracket screws. NOTE CONNECTOR ORIENTATION REQUIRED.
5. Slip the FPB Key onto the connector brackets, and mount the FPB Rear Connector A3 using the two remaining connector bracket screws. NOTE THE ORIENTATION REQUIRED.

D. Final Assembly (see page 305-5)

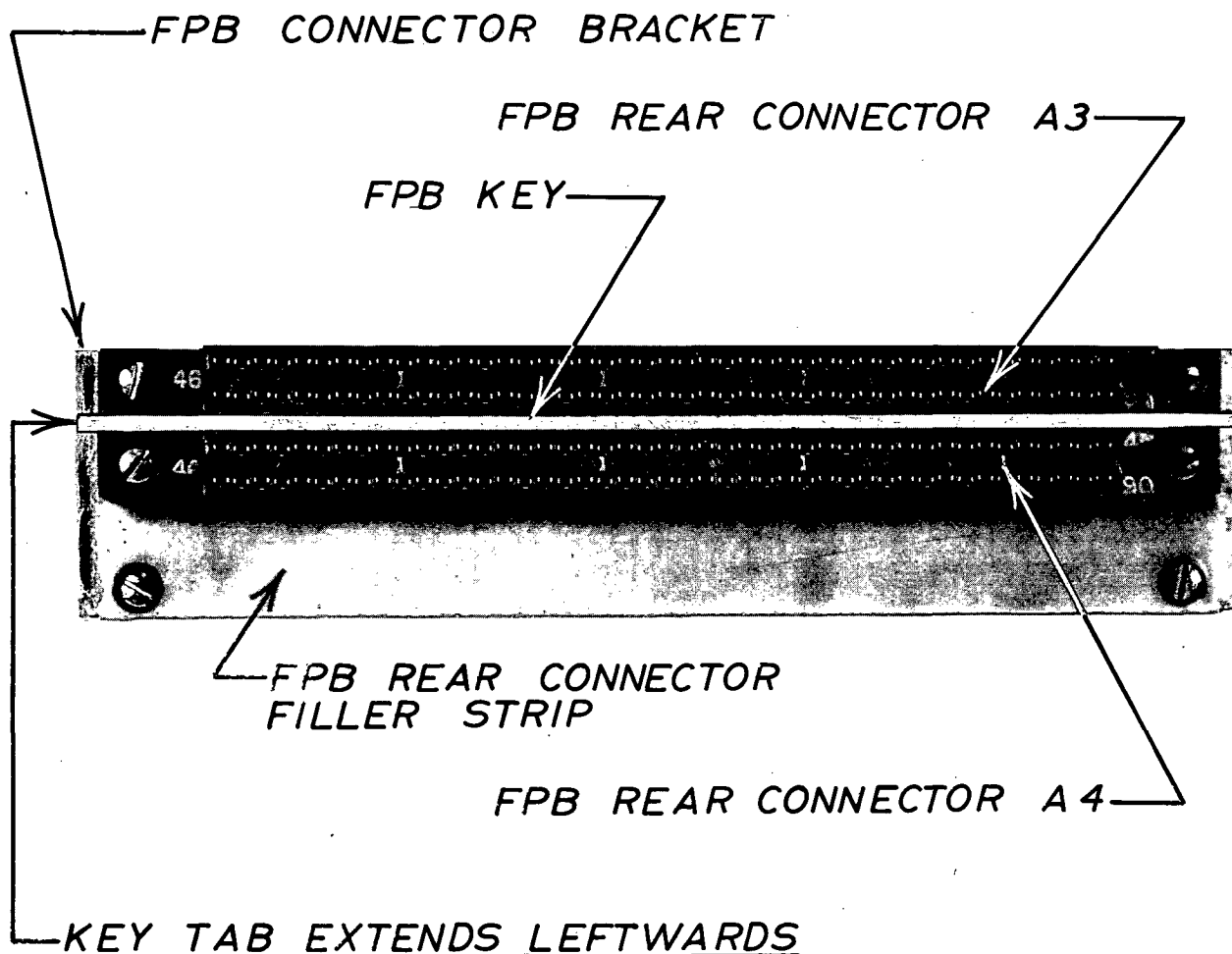
1. Remove the four screws holding the top cover plate to the 1-cell FPB Shell struts and remove the top cover plate and the top overlay clip.
2. Slip the rear connector block of the Visceral Subassembly into the slots provided in the struts for the connector brackets, and attach the Faceplate to the front using the remaining 2-56 fillister head screws. NOTE THE ORIENTATION REQUIRED.
3. Reinstall the top overlay clip and attach the top cover plate, taking care to assure that the wires are not pinched.

CHG.	E.C.O.	DATE	APPR.
Issue	-	9/28/70	<i>ECJ</i>
A	0059	10-20-70	<i>WLB</i>



NOTE ORIENTATION

			COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE TYPE 5 FPB ASSEMBLY	
			MACROMODULAR PROJECT		APPROVED BY <i>WAC</i> FOR <i>PROD</i> DATE <i>10-20-70</i>	
A 10-21-70 E.C.O. 0059 <i>WAC</i>					ENG. <i>WAC</i> DRAWN BY <i>PLL</i>	
CHANGE NO.	DATE	DESCRIPTION			CHECKED <i>WAC</i> DATE <i>10-20-70</i>	DRAWING NO. 305-5



NOTE ORIENTATION OF EACH PART

COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI				MACROMODULAR PROJECT			
				TITLE TYPE 5 FPB REAR CONNECTOR BLOCK-ASSEMBLY ORIENTATION			
				APPROVED			ENG WAC
				BY WAC	FOR PROD.	DATE 10-20-70	DRAWING NO. 305-6
							DRAWN BY DHO
							CHECKED WAC
							DATE 10-20-70
CHANGE NO.	DATE	DESCRIPTION					
A	10-20-70	E.C.O 0059		WAC			

TYPE 5 FACEPLATE SUB-SUBASSEMBLY
(SEE PAGE 305-9)

FPB REAR CONNECTOR
A3

FPB KEY

FPB REAR CONNECTOR
A4

FPB REAR CONNECTOR FILLER STRIP

TYPE 5 FPB INTERWIRING
SUB-SUBASSEMBLY (SEE PAGE 305-8)

FPB CONNECTOR BRACKET

FPB CONNECTOR BRACKET SCREWS

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TITLE

TYPE 5 FPB VISCERAL SUBASSEMBLY

APPROVED
BY *406* FOR PROD. DATE 10-20-70

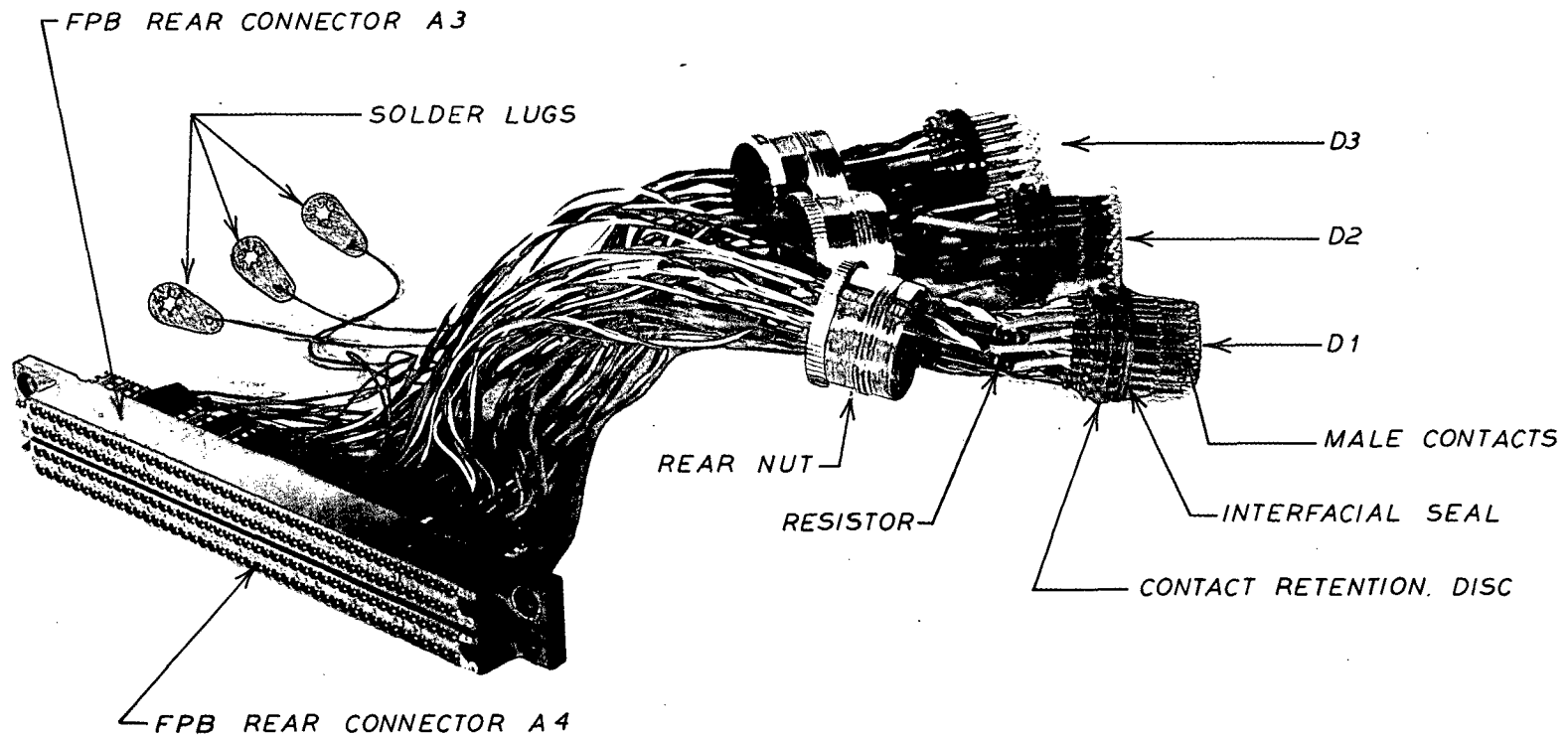
ENG.
GCJ
DRAWN BY
DHO

DRAWING NO.
305-7

CHECKED
WAT

DATE
10-20-70

CHANGE NO.	DATE	DESCRIPTION
A	10-20-70	E.C.O. 0059 <i>WAT</i>



COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TITLE

TYPE 5 FPB INTERWIRING SUB-SUBASSEMBLY

ISSUE 92870

GCJ

CHANGE NO.

DATE

DESCRIPTION

APPROVED

BY

FOR

DATE

GCJ

PROD.

9-28-70

ENG

GCJ

DRAWN BY

PLL

CHECKED

GCJ

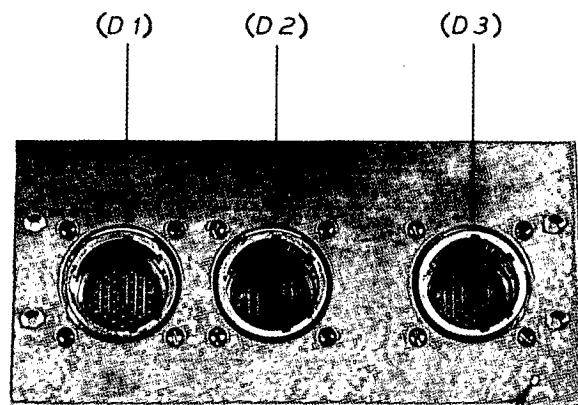
DRAWING NO.

305-8

DATE

9-2-70

NOTE
ORIENTATION

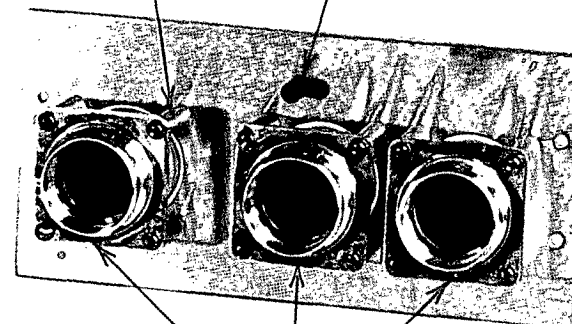


TYPE 5 FACEPLATE

ROLL PIN SUNK FLUSH
WITH REAR SURFACE

ASTRO STANDOFF

SPRING PLUNGER



ASTRO 348 RECEPTACLE SHELLS

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TITLE

TYPE 5 FACEPLATE SUB-SUBASSEMBLY

APPROVED

ENG.

DRAWING NO

BY FOR DATE

G C J

305-9

PROD. 9-28-70

DRAWN BY

PLL

CHECKED

DATE

9-2-70

ISSUE 9-28-70

CHANGE
NO.

DATE

DESCRIPTION

[FPT5C
[FACEPLATE TYPE 5 WIRING LIST
[

>>>>>>>>>>>>>>>>>>>

>>>>>>>>>>>>>>>>>

>>>>>>>>>>>>>>>>

>>>>>>>>>>>>>>>>>>>

>>>>>>>>>>>>>>>>>>>

>>>>>>>>>>>>>>>>>>>

➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤ ➤

>>>>>>>>>>>>>>>>>>>

31D2 (SLATE

305-10

[illegible]

17

●

1

4

1

1

1

3

1

>>>>>>>>>>>>>>>>>>>

305-12

8D2 [WHITE

#>>>>>>>>>>>>
49A3
15D2 [GREEN

50A3
14D2 [RED

#>>>>>>>>>>>>
51A3 [NO CONNECTION

#>>>>>>>>>>>>
52A3 [NO CONNECTION

#>>>>>>>>>>>>
53A3
13D2 [GREEN

54A3
12D2 [WHITE

#>>>>>>>>>>>>
55A3
11D2 [BROWN

56A3
10D2 [WHITE

#>>>>>>>>>>>>
57A3 [NO CONNECTION

#>>>>>>>>>>>>
58A3 [NO CONNECTION

#>>>>>>>>>>>>
59A3 [NO CONNECTION

#>>>>>>>>>>>>
60A3 [NO CONNECTION

#>>>>>>>>>>>>
61A3
18D2 [VIOLET

62A3
19D2 [BLUE

#>>>>>>>>>>>>
63A3
18D1 [VIOLET

64A3
19D1 [BLUE

#>>>>>>>>>>>>
65A3 [NO CONNECTION

[illegible]

>>>>>>>>>>>>>>>>

305-16

[illegible]

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY

306

TYPE 6 FACEPLATE BOX

PAGE	TITLE	CHANGE
306-1	TITLE PAGE	ISSUE
306-2	TYPE 6 FACEPLATE BOX PARTS LIST	
306-3	TYPE 6 FACEPLATE BOX - INTRODUCTION AND ASSEMBLY PROCEDURE	
306-4		
306-5	TYPE 6 FPB ASSEMBLY	
306-6	TYPE 6 FPB REAR CONNECTOR BLOCK - ASSEMBLY ORIENTATION	
306-7	TYPE 6 FPB VISCERAL SUBASSEMBLY	
306-8	TYPE 6 FPB INTERWIRING SUB-SUBASSEMBLY	
306-9	TYPE 6 FACEPLATE SUB-SUBASSEMBLY	
306-10	CONNECTOR PIN DESIGNATION	
306-11 thru 306-14	TYPE 6 FACEPLATE BOX WIRING LIST	

CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.
ISSUE	-	1-25-72	<i>Cern</i>								

TYPE 6 FACEPLATE BOX PARTS LIST

QTY.	C.S.L. DOC.	PART
1	300.1	1-CELL FPB SHELL
1	300.5-15	TYPE 6 FACEPLATE
2	300.5-3	FPB CONNECTOR BRACKET SCREW
1	300.5-5	FPB KEY
1	300.6	V-BUS SUBASSEMBLY
1	300.0	FPB REAR CONNECTOR
1	300.7-3	TYPE 1 FUNCTION CODE SWITCH SUBASSEMBLY
8	300.0	COAXICON
8	300.0	FERRULE
1	-	VLIER #NS-51N SPRING PLUNGER
22	-	3/16 x 2-56 FILLISTER HEAD SS MACHINE SCREW
-	300.0	WIRE (SEE 306-11 ff FOR COLOR CODE)
3		AMPHENOL 31-223 TWIN BNC CONNECTORS
3		3/8 INCH SOLDER LUG

[illegible]

MACROMODULAR SYSTEMS PROJECT

306-2

TYPE 6 FACEPLATE BOX

INTRODUCTION

This document (306) describes the assembly of the Type 6 Faceplate Box. A summary list of all required parts, including subassemblies specified in other documents, is given on page 306-2. The general specification on wire preparation and wiring procedures (CSL Document 300.0) must be followed, together with the color code information supplied by the Type 6 Faceplate Box Wiring List (pages 306-11 ff).

ASSEMBLY PROCEDURE

A. Type 6 Faceplate Sub-subassembly (see page 306-9)

- 1) Crimp-wire the set of eight coaxicon control connectors and press the resulting pre-wired connectors into the faceplate in the locations shown on page 306-9, taking care to assure that after installation the connectors will accept a mating coaxicon plug without binding. NOTE THE ORIENTATION REQUIRED.
- 2) Screw the spring plunger into the faceplate until the tip of the plunger protrudes from the front surface of the faceplate by approximately 0.090 inch.
- 3) Mount the three coax connectors with solder lugs to the faceplate as shown on page 306-9. The lock-washers are to be placed in the counterbored hole in the front of the faceplate before inserting the connector. NOTE THE ORIENTATION REQUIRED.

B. Type 6 FPB Interwiring Sub-subassembly (see page 306-8)

- 1) Jumper the Type 6 Function Code Switch Sub-assembly and wire to the FPB Rear Connector A3.

C. Type 6 Visceral Subassembly (see page 306-7)

- 1) Mount the Function Code Switch Subassembly on the faceplate using two 2-56 fillister head screws. The sense pins must operate freely.

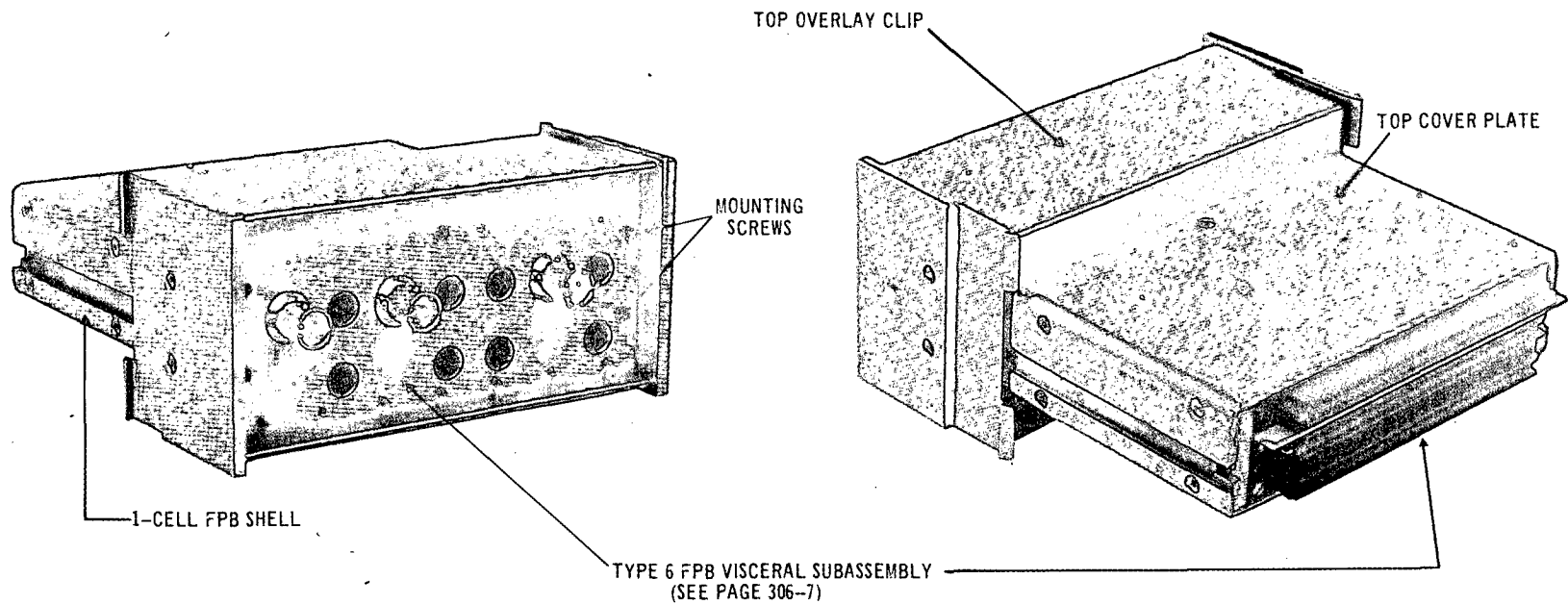
CHG.	E.C.O.	DATE	APPR.
ISSUE	-	1-25-72	cem

- 2) Wire the leads from the coaxicon control connectors and the coax connectors to the FPB Rear Connector A3.
- 3) Wire coax connectors.
- 4) Rear connector block:
Slip the FPB Key onto the V-Bus Subassembly connector brackets, and mount the FPB Rear Connector A3 using the two connector bracket screws. NOTE THE ORIENTATION REQUIRED (page 306-6).

D. Final Assembly (see page 306-5)

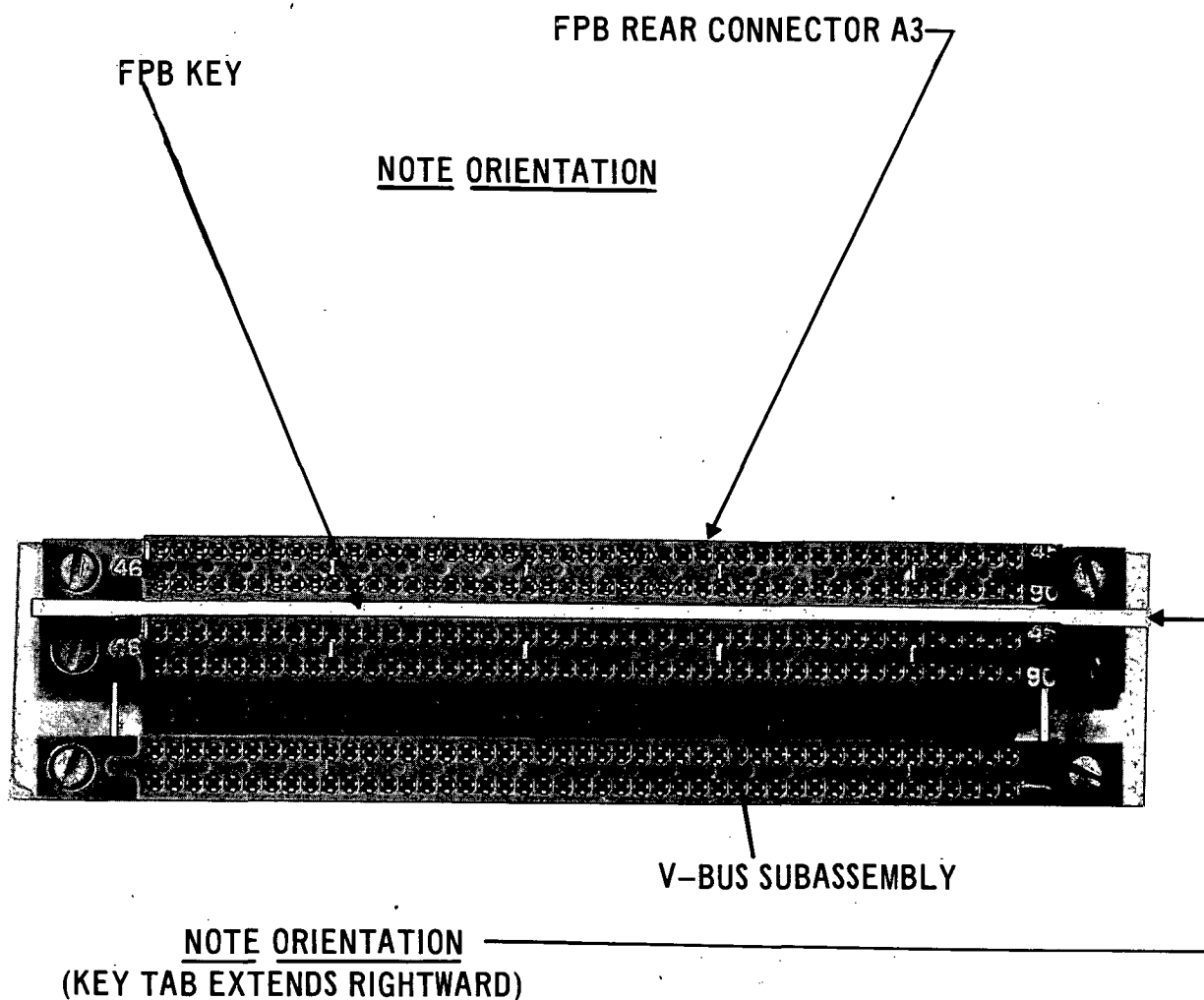
- 1) Remove the four screws holding the top cover plate to the 1-cell FPB Shell struts and remove the top cover plate and the top overlay clip.
- 2) Slip the rear connector block of the Visceral Subassembly into the slots provided in the struts for the connector brackets, and attach the Faceplate to the front using the remaining 2-56 fillister head screws. NOTE THE ORIENTATION REQUIRED.
- 3) Reinstall the top overlay clip and attach the top cover plate, taking care to assure that the wires are not pinched.

CHG.	E.C.O.	DATE	APPR.
ISSUE	-	1-25-72	<i>cem</i>

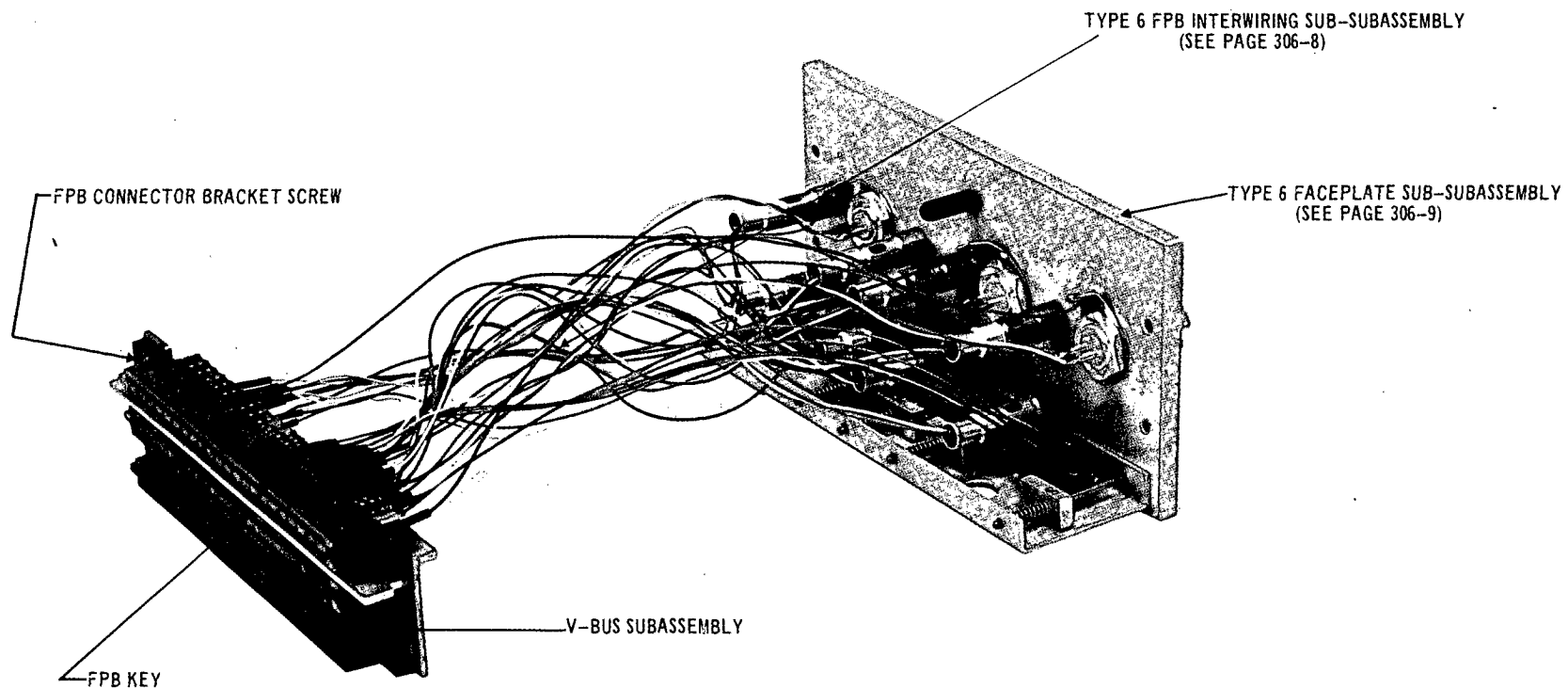


NOTE ORIENTATION

		COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE TYPE 6 FPB ASSEMBLY			
				APPROVED BY FOR DATE <i>cen</i> PROD. 2-3-72		ENG. FOR DRAWN BY MBP	DRAWING NO. 306-5
ISSUE 1-27-72 <i>cen</i>		MACROMODULAR PROJECT		CHECKED <i>TUR</i>		DATE 1-27-72	
CHANGE NO.	DATE			DESCRIPTION			



COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI			MACROMODULAR PROJECT				
			TITLE TYPE 6 FPB REAR CONNECTOR BLOCK-ASSEMBLY ORIENTATION				
			APPROVED			ENG FUR	DRAWING NO. 306-6
			BY Cem	FOR PROD.	DATE 2-3-72	DRAWN BY MBP	
			CHECKED TUA			DATE 1-27-72	
ISSUE	1-27-72	Cem					
CHANGE NO.	DATE	DESCRIPTION					



COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

TITLE
TYPE 6 FPB VISCERAL SUBASSEMBLY

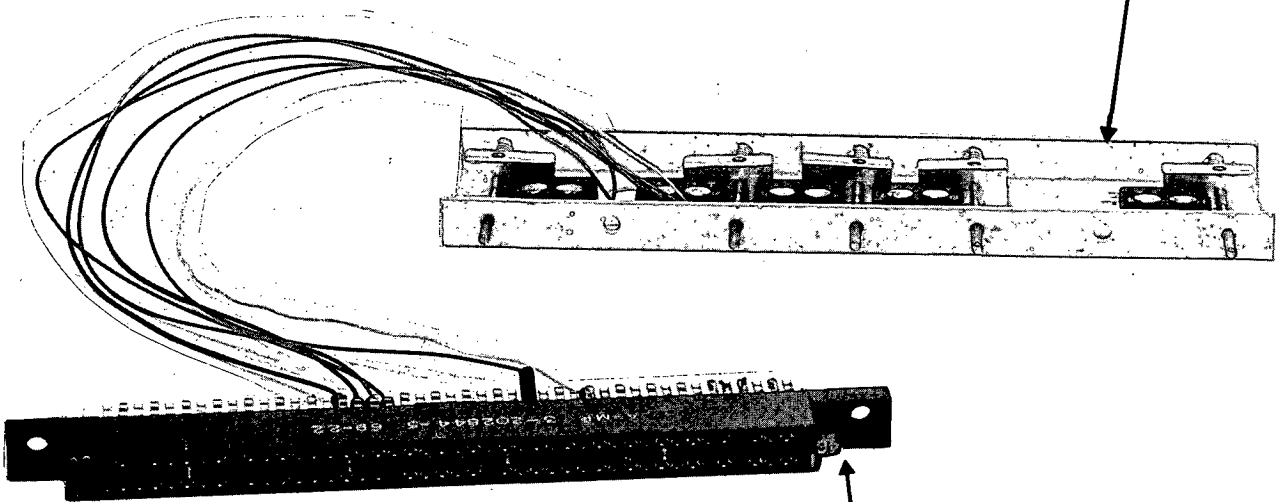
MACROMODULAR PROJECT

APPROVED			ENG.	DRAWING NO.
BY	FOR	DATE	FUR	306-7
<i>Cern</i>	PROD.	2-3-72	DRAWN BY MBP	
			CHECKED <i>WUR</i>	DATE 1-27-72

ISSUE 1-27-72 *Cern*

CHANGE NO.	DATE	DESCRIPTION

TYPE 1 FPB FUNCTION CODE SWITCH SUBASSEMBLY



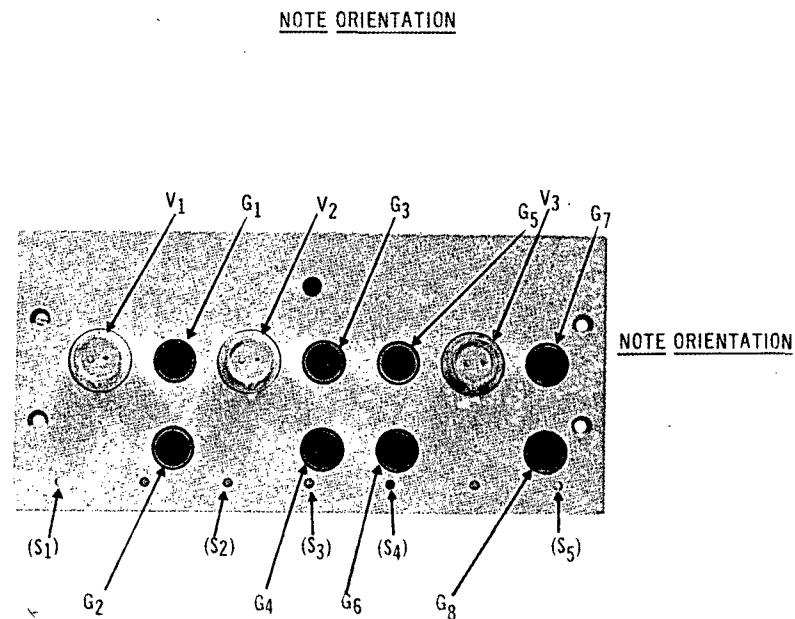
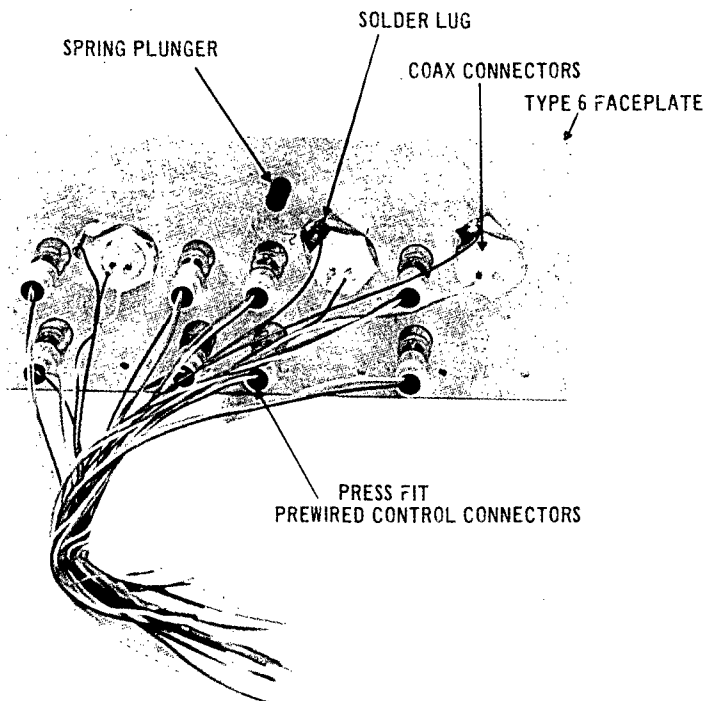
FPB REAR CONNECTOR
A4

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

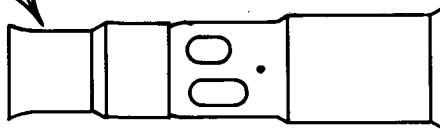
TITLE
TYPE 6 FPB FUNCTION CODE
WIRING SUB-SUBASSEMBLY

ISSUE	1-27-72	cem	APPROVED			ENG FUR	DRAWING NO.
			BY	FOR	DATE	DRAWN BY	306-8
			Cem	PROD.	2-3-72		
			CHANGE NO.	DATE	DESCRIPTION	CHECKED	DATE
			FUR	1-27-72			

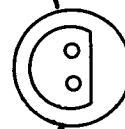


		COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE TYPE 6 FACEPLATE SUB-SUBASSEMBLY			
				APPROVED BY <i>cen</i> FOR PROD. DATE 2-3-72		ENG. FUR DRAWN BY MBP	DRAWING NO. 306-9
ISSUE 1-28-72 <i>cen</i>		MACROMODULAR PROJECT		CHECKED <i>GR</i>		DATE 1-28-72	
CHANGE NO.	DATE			DESCRIPTION			

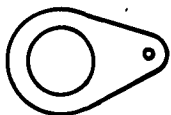
PIN 3 IS GROUND UNDER
CRIMP FERRULE



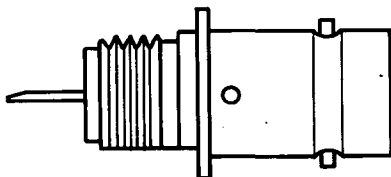
PIN 1



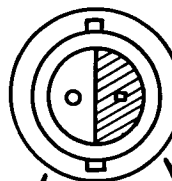
PIN 2



SOLDER LUG



PIN 3 IS SOLDER
LUG



PIN 1
MALE

PIN 2
FEMALE

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TITLE

CONNECTOR PIN DESIGNATION

APPROVED

ENG

DRAWING NO.

BY

FOR

DATE

FUR

DRAWN BY

PLL

306-10

CHECKED

TUR

DATE

1-25-72

ISSUE 1-25-72 cem

CHANGE
NO.

DATE

DESCRIPTION

[FPT6C
[FACEPLATE TYPE 6 WIRING LIST

CHG.	E.C.O.	DATE	APPR.
ISSUE	-	1-25-72	am


```
# 3G6 [ BLUE
>>>>>>>>>>>>>>
33A3
2S5 [BLUE
# >>>>>>>>>>>>>>
34A3
3G2 [ BLUE
# >>>>>>>>>>>>>>
35A3
3S2 [RED
# >>>>>>>>>>>>>>
36A3 [NO CONNECTION
# >>>>>>>>>>>>>>
37A3
3S3 [RED
# >>>>>>>>>>>>>>
56A3
2S1 [RED
# [PINS 38A3 THROUGH 55A3 INCLUSIVE ARE NO CONNECTION
>>>>>>>>>>>>>>
58A3
3G8 [ BLUE
# >>>>>>>>>>>>>>
59A3
1G8 [ YELLOW
# 60A3
2G8 [ GREEN
# >>>>>>>>>>>>>>
61A3
1S1 [YELLOW
1S2 [YELLOW
1S3 [YELLOW
1S4 [YELLOW
1S5 [YELLOW
# >>>>>>>>>>>>>>
62A3 [NO CONNECTION
# >>>>>>>>>>>>>>
63A3 [NO CONNECTION
# >>>>>>>>>>>>>>
64A3 [NO CONNECTION
>>>>>>>>>>>>>>
65A3
1V3 [YELLOW
```

CHG.	E.C.O.	DATE	APPR.
ISSUE	-	1-25-72	<i>Cem</i>

```
#
66A3
2V3 [BLUE
>>>>>>>>>>>>>>
67A3
3V3 [BLUE
#
>>>>>>>>>>>>>>
68A3
3G7 [ BLUE
#
>>>>>>>>>>>>>>
69A3
1G7 [ YELLOW
#
70A3
2G7 [ ORANGE
#
>>>>>>>>>>>>>>
[ PINS 71A3 THROUGH 90A3 INCLUSIVE ARE NO CONNECTION
[
[END OF WIRING LIST .
[
[FPT6C
[27 DECEMBER 1971
[GERALD C JOHNS
[FPT6WL
```

306-14

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY

307

TYPE 7 FACEPLATE BOX

PAGE	TITLE	CHANGE
307-1	TITLE PAGE	ISSUE
307-2	PARTS LIST	
307-3	INTRODUCTION AND ASSEMBLY PROCEDURE	
307-4	TYPE 7 FPB ASSEMBLY	

CHG.	E.C.O.	DATE	APPR	CHG.	E.C.O.	DATE	APPR	CHG.	E.C.O.	DATE	APPR.
ISSUE	-	2-29-72	RJA								

PARTS LIST

QTY.	C.S.L. DOC.	PART
1	300,1	1-CELL FPB SHELL
1	300,5-18	TYPE 7 FACEPLATE
1	300,5-16	TYPE 7 REAR CONNECTOR FILLER STRIP
1	300,6	V-BUS SUBASSEMBLY
1	-	VLIER NO. NS-51N SPRING PLUNGER
2	300,5-3	FPB CONNECTOR BRACKET SCREW
4	-	3/16 x 2-56 FILLISTER HEAD SS MACHINE SCREWS

[illegible]

INTRODUCTION AND ASSEMBLY PROCEDURE

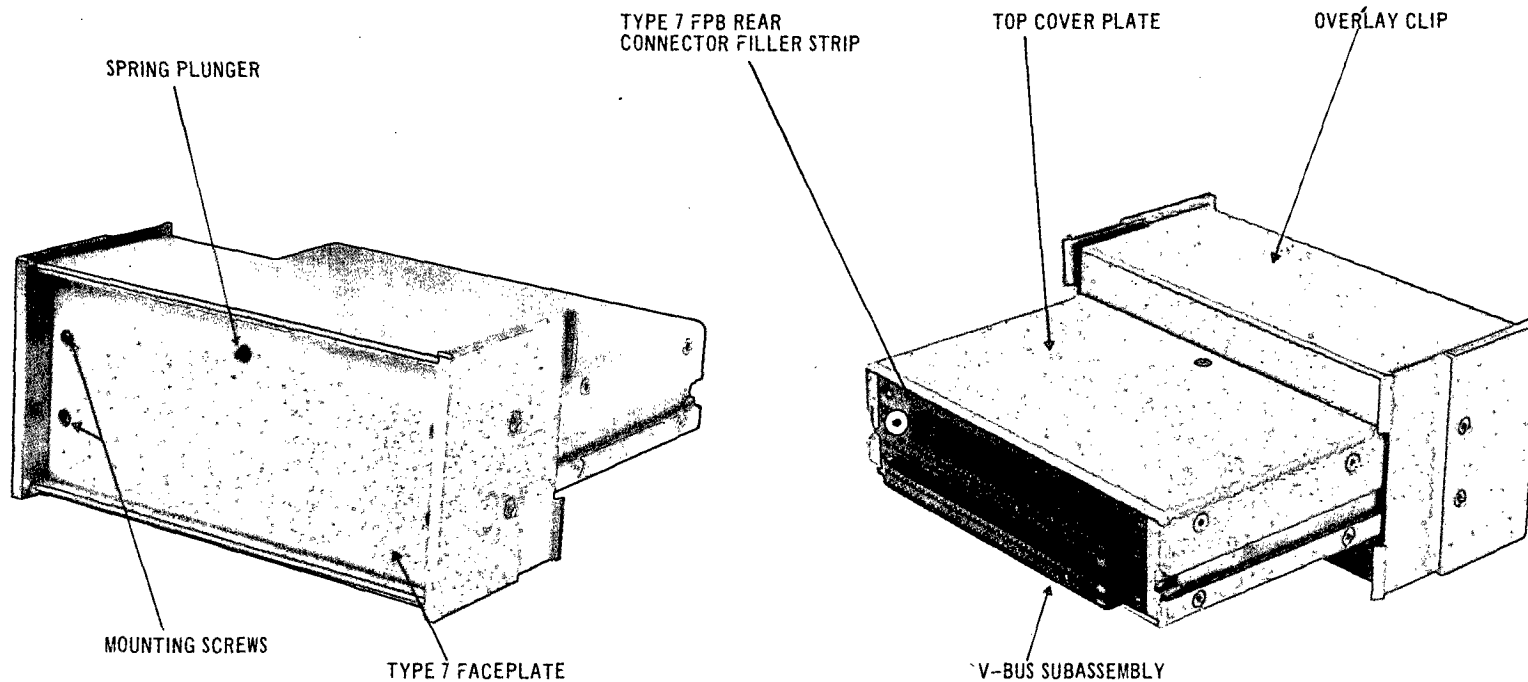
Introduction

This document (307) describes the assembly of the type 7 Faceplate box. A summary list of all required parts, including subassemblies specified in other documents, is given on page 307-2.

Assembly Procedure

- 1) Screw the spring plunger into the faceplate until the tip of the plunger protrudes from the front surface of the faceplate by approximately .090 inch.
- 2) Onto the V-Bus Subassembly mount the type 7 FPB rear connector filler strip using the two connector bracket screws. Note the orientation required.
- 3) Remove the four screws holding the top cover plate to the 1-cell FPB shell struts and remove the top cover plate and the overlay clip.
- 4) Slip the V-bus subassembly into the slots provided in the struts for the connector brackets, and attach the Faceplate to the front using the four 2-56 fillister head screws. Note the orientation required.
- 5) Reinstall the top overlay clip and top cover plate.

CHG.	E.C.O.	DATE	APPR.
ISSUE	-	2-29-72	RJA



			COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE TYPE 7 FPB ASSEMBLY				
			MACROMODULAR PROJECT		APPROVED BY: <i>RJA</i> FOR: PROD. DATE: <i>3-1-72</i>			ENG. <i>RJA</i>	DRAWING NO. 307-4
ISSUE 2-29-72 <i>RJA</i>								DRAWN BY MBP	
CHANGE NO.	DATE	DESCRIPTION						CHECKED <i>MTK</i>	DATE 2-29-72

308

[illegible][illegible]

TYPE 8 FACEPLATE BOX PARTS LIST

QTY.	C.S.L. DOC.	PART
1	300,1	1-CELL FPB SHELL
1	300,5-18	TYPE 8 FACEPLATE
1	300,5-17	TYPE 8 FPB FILLER
1	-	VLIER NO. NS-51N SPRING PLUNGER
4	-	3/16 x 2-56 FILLISTER HEAD SS MACHINE SCREWS

CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.
ISSUE	-	2-29-72	RJA								

INTRODUCTION AND ASSEMBLY PROCEDURE

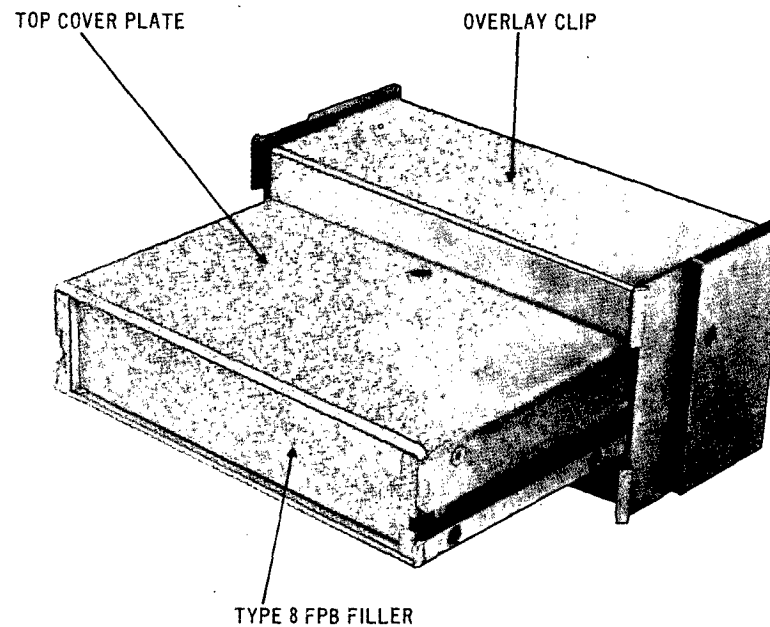
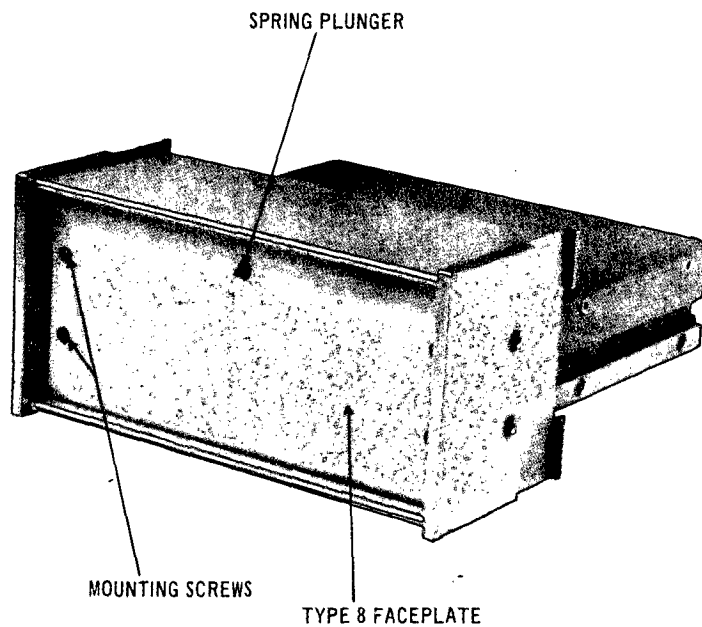
Introduction

This document (308) describes the assembly of the type 8 Faceplate box. A summary list of all required parts, including subassemblies specified in other documents, is given on page 308-2.

Assembly Procedure

- 1) Screw the spring plunger into the faceplate until the tip of the plunger protrudes from the front surface of the faceplate by approximately .090 inch.
- 2) Remove the four screws holding the top cover plate to the 1-cell FPB shell struts and remove the top cover plate and the overlay clip.
- 3) Slip the type 8 FPB filler into the slots provided in the struts and attach the Faceplate to the front using the four 2-56 fillister head screws. Note the orientation of the Faceplate.
- 4) Reinstall the top overlay clip and the top cover plate.

CHG.	E.C.O.	DATE	APPR.
ISSUE	-	2-29-72	RJA



				COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE TYPE 8 FPB ASSEMBLY				
				MACROMODULAR PROJECT		APPROVED BY <i>RJA</i> FOR <i>PROD.</i> DATE <i>3-1-72</i>			ENG. <i>RJA</i>	DRAWING NO. 308-4
ISSUE 2-29-72		<i>RJA</i>				DRAWN BY MBP			DATE 2-29-72	
CHANGE NO. DATE		DESCRIPTION				CHECKED <i>ATK</i>			DATE 2-29-72	

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY

309

TYPE 9 FPB

PAGE	TITLE	CHANGE
309-1	TITLE PAGE	ISSUE
309-2	PARTS LIST	
309-3 thru 309-4	INTRODUCTION AND ASSEMBLY PROCEDURES	
309-5	TYPE 9 FPB ASSEMBLY	
309-6	TYPE 9 FPB VISCERAL SUBASSEMBLY	
309-7	TYPE 9 FACEPLATE COMPONENT ORIENTATION	
309-8	TYPE 9 FACEPLATE SUB-SUBASSEMBLY FRONT-VIEW	
309-9	PC BOARD ASSEMBLY JIG	
309-10	PC BOARD WIRING	
309-11	VIKING CONNECTOR WIRING INSTRUCTIONS	
309-12	LED ORIENTATION	
309-13 thru 309-14	WIRE LIST FOR COAXICONS	
309-15	WIRE LIST FOR PC BOARD HOLES	
309-16	WIRE LIST FOR VIKING CONNECTOR	
309-17	WIRE LIST FOR CODE SWITCH	
309-18 thru 309-23	TYPE 9 FPB WIRING LIST	

CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.
Iss		6-15-73	RJA								

MACROMODULAR SYSTEMS PROJECT

TYPE 9 FACEPLATE BOX PARTS LIST

QTY.	C.S.L. DOC.	PART
1	300.1	1-CELL FPB SHELL
1	300.5-27	TYPE 9 FACEPLATE
2	300.5-3	FPB CONNECTOR BRACKET SCREW
4	300.5-4	ASTRO STANDOFF
1	300.5-5	FPB KEY
1	300.6	V-BUS SUBASSEMBLY
1	300.0	FPB REAR CONNECTOR
1	300.7	TYPE 3 FUNCTION CODE SWITCH SUBASSEMBLY
1		VLIER NO. NS-5IN SPRING PLUNGER
20		2-56 x 3/16 FILLISTER HEAD SS MACHINE SCREW
—	300.0	WIRE (SEE 301-10 ff FOR COLOR CODE)
1		VIKING CONNECTOR NO. 3VH10/1JN5
2	300.5-19	CONNECTOR STRUTS TYPE 1
2	300.5-21	STRUT COVERS
2		4-40 x 3/8 BINDER HEAD SCREWS
1		VIKING POLARIZING KEY NO. 091-0071-000
1		8-32 HEX NUT
5		INTERSWITCH NO. 675-022-100 DATA MODULE
1	300.5-28	WCL0208-1 CIRCUIT BOARD
2		MONSANTO NO. MV5023 LIGHT EMITTING DIODES
15	300.0	COAXICON
15	300.0	COAXICON FERRULE

[illegible]

MACROMODULAR SYSTEMS PROJECT

INTRODUCTION

This document (309) describes the assembly of the Type 9 Faceplate Box. A summary list of all required parts, including subassemblies specified in other documents, is given on page 309-2. The general specification on wire preparation and wire procedures (CSL Document 300.0) must be followed, together with the color code information supplied by the wire lists for the Type 9 Box (pages 309-13 ff).

ASSEMBLY PROCEDURE

A. Type 9 Faceplate Subassembly

- 1) Following the table on page 309-13, crimp wire pairs into the coaxicon connectors.
- 2) Press the coaxicon connectors into the faceplate as shown in page 309-8. Note the orientation.
- 3) Screw the spring plunger into the faceplate until the tip protrudes approximately 0.090 inch from the front surface. Lock the plunger in place with a 8-32 hex nut.
- 4) Preparation of the Circuit Board Subassembly:
 - a) Insert and solder twenty-four blue wires to the circuit board as shown on page 309-10. Push stripped wire into hole until insulation is flush with solder pad. Bend wire end over onto the pad, and solder. Cut off any extra.
 - b) Using 2-56 fillister head screws, attach four ASTRO standoffs loosely to the blank side of the circuit board - DO NOT TIGHTEN:
 - c) Insert two light emitting diodes from the blank side so that the lead with the double shoulder (see page 309-12) protrudes through the hole marked "X".
DO NOT SOLDER YET.
 - d) With the assembly jig held in a vise as shown in page 309-9, fit the circuit board up to the jig by placing the standoffs in the appropriate holes. Be sure that the LED's are lined up with the two holes in the jig marked "X".
 - e) Tighten the four screws, and then solder the LED's in place. Be sure that both leads of an LED protrude at least 0.025 inch - that is equal to the width of the lead.

CHG.	E.C.O.	DATE	APPR
Issue	-----	6-15-73	RJA

NOTE:

In production, it may be easier to tighten the screws with the jig laying on a flat surface - before the LED's are inserted. Then mount the jig in a vise and mount the LED's.

- f) Insert the five data modules into the circuit board. Mate the assembly jig to the circuit board subassembly and set it down on a flat surface. Solder the data modules to the board.
- 5) Mount the circuit board subassembly to the faceplate with four 2-56 fillister head screws.
- 6) Insert the polarizing key between contacts 6 and 7 in the Viking connector. Mount the Viking connector as shown on page 309-6. Use two 4-40 x 3/8 binder head screws to hold the connector to the struts. Use six 2-56 fillister head screws to hold the strut covers to the struts and to hold the struts to the faceplate. NOTE: insert all eight screws loosely before tightening any one of them, then tighten the strut covers first.
- 7) Following the list on page 309-16, solder the eight wire pairs and two single wires to the Viking connector. The wires must be soldered to the contacts as shown on pages 309-6 and 309-11.
- 8) Solder two wires to the code switch according to the list on page 309-17. Mount the code switch subassembly to the faceplate with two 2-56 x 3/16 fillister head screws.

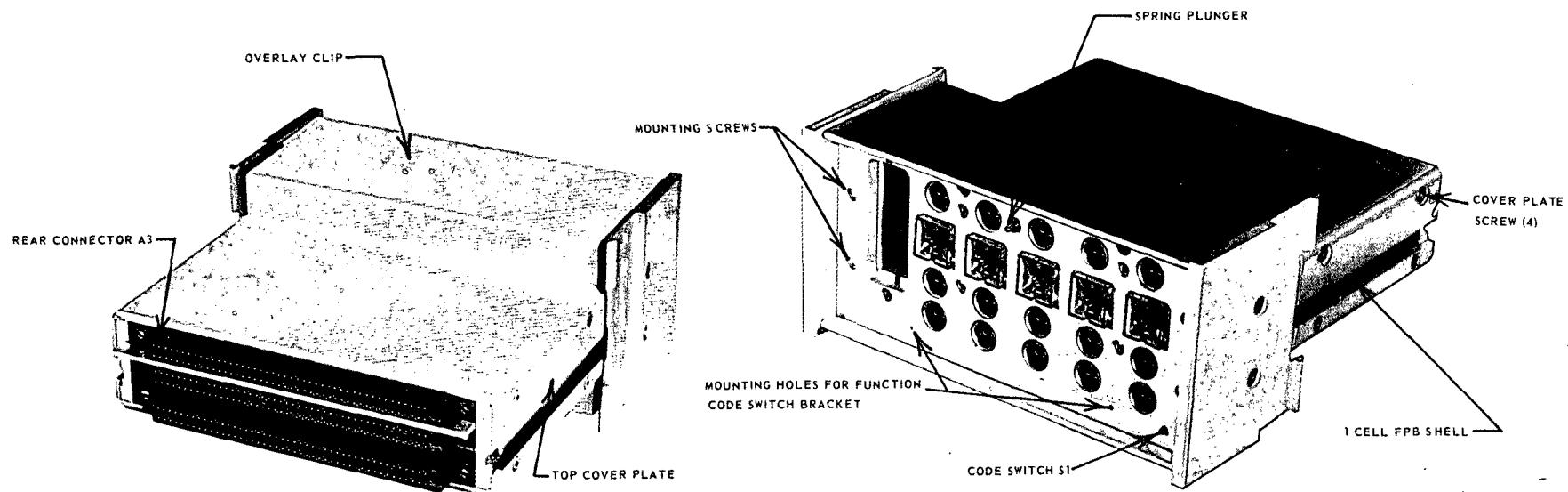
B. Type 9 FPB Interwiring Subassembly

Following the type 9 Faceplate Box Wiring List on pages 309-18-ff, make all connections indicated to the FPB rear connector A3. Use shrink tubing on each connection.

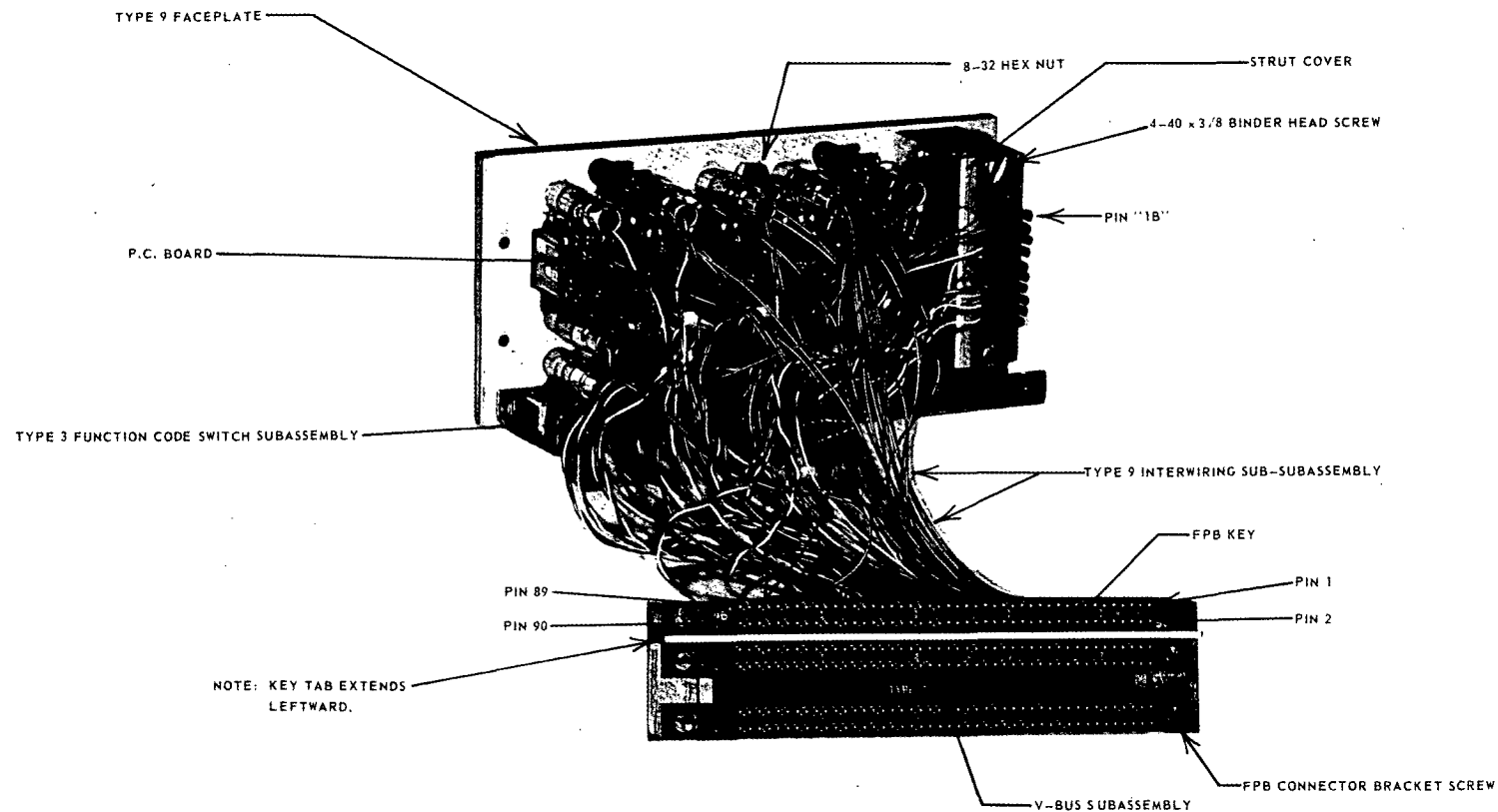
C. Final Assembly

- 1) Slip the FPB key onto the V-Bus subassembly connector brackets, and mount the FPB rear connector A3 using the two bracket screws. Note the orientation of the key and connector shown on page 309-6.
- 2) Remove the four screws holding the top cover plate to the 1-cell FPB shell struts, and remove the top cover plate and overlay clip.
- 3) Slip the rear connector bracket into the slots provided in the struts and attach the faceplate to the front using four 2-56 fillister head screws.
- 4) Replace top cover plate and overlay clip being careful not to pinch any wires.

CHG.	E.C.O.	DATE	APPR.
Issue	-----	6-15-73	RJA

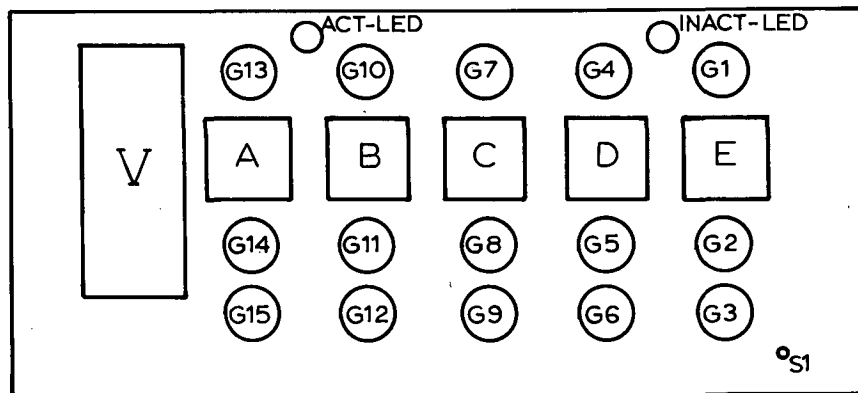


		COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE TYPE 9 FPB ASSEMBLY				
ISSUE	6-13-73			RJA		APPROVED BY FOR DATE RJA PROD 6-19-73		ENG. MLP DRAWN BY GWP
CHANGE NO.	DATE	DESCRIPTION		MACROMODULAR PROJECT		CHECKED MLP		DATE 6-15-73

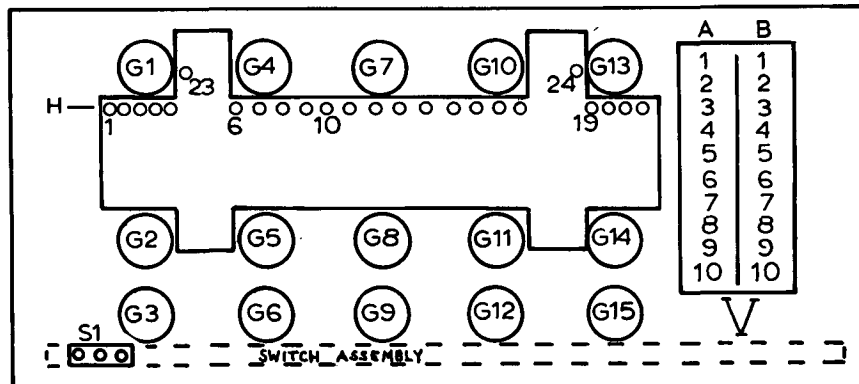


		COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE			
				TYPE 9 FPB VISCERAL SUBASSEMBLY			
ISSUE	6-15-73	RJA	APPROVED			ENG.	DRAWING NO.
			BY	FOR	DATE	MLP	
			RJA	PROD	6-19-73	DRAWN BY	309-6
						CHECKED	DATE
CHANGE NO.	DATE	DESCRIPTION				MLP	6-15-73

MACROMODULAR PROJECT



FRONT



BACK

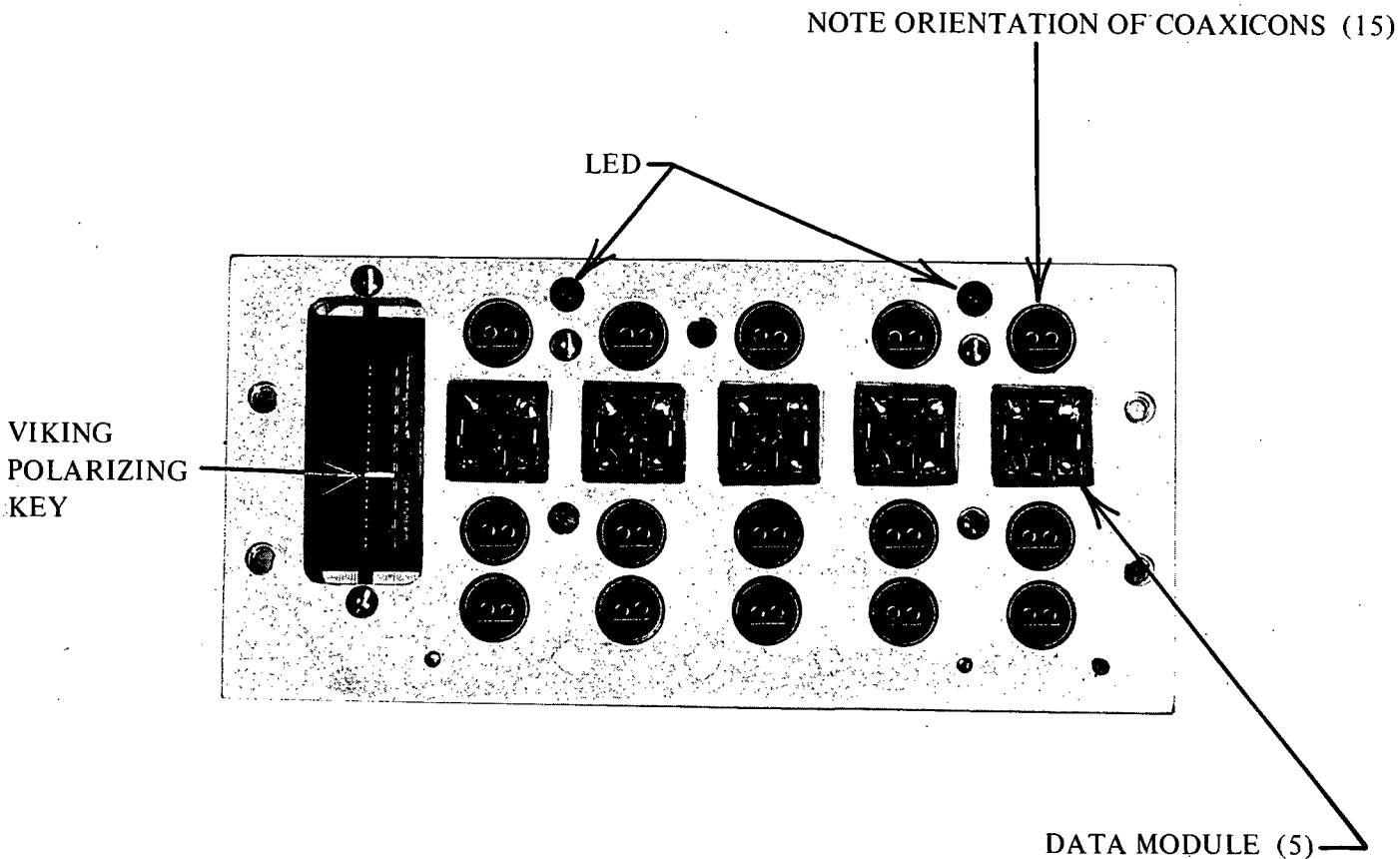
COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

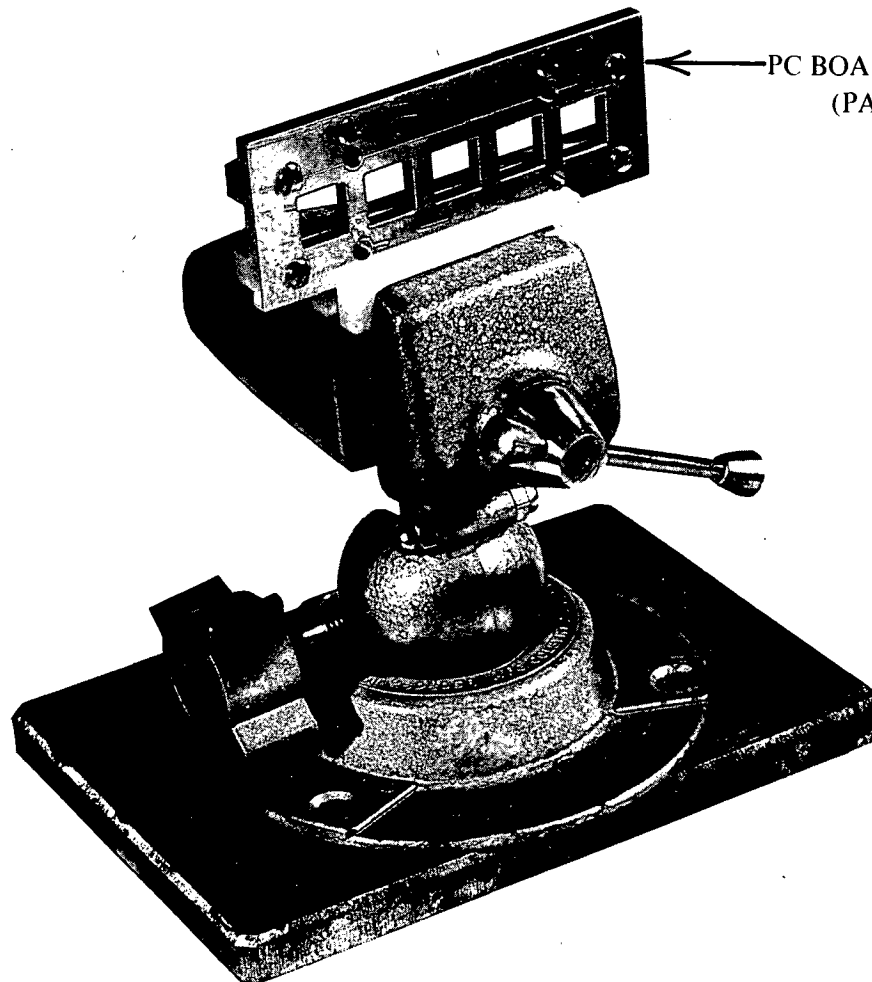
TITLE
TYPE 9 FACEPLATE
COMPONENT ORIENTATION

ISSUE	6-15-73	RJA
CHANGE NO.	DATE	DESCRIPTION

APPROVED			ENG MLP	DRAWING NO. 309-7
BY RJA	FOR PROD	DATE 6-19-73	DRAWN BY MAC	
			CHECKED MXP	DATE 6-15-73



COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI			MACROMODULAR PROJECT						
			TITLE TYPE 9 FACEPLATE SUB-SUBASSEMBLY FRONT-VIEW						
			APPROVED			ENG MLP		DRAWING NO. 309-8	
			BY <i>RJA</i>	FOR PROD	DATE <i>6-19-73</i>	DRAWN BY DLS			
			Iss. <i>6-15-73</i> <i>RJA</i>			CHECKED <i>MLP</i>			DATE 6-15-73
CHANGE NO.	DATE	DESCRIPTION							



PC BOARD ASSEMBLY JIG
(PART NO. 903)

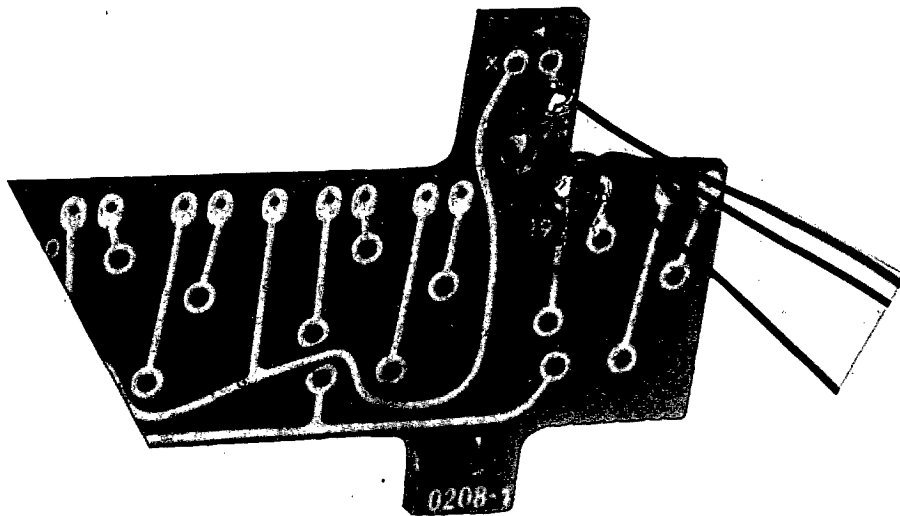
COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TITLE

PC BOARD ASSEMBLY JIG

Issue	6-15-73	RJA	APPROVED			ENG MLP	DRAWING NO. 309-9
			BY RJA	FOR PROD	DATE 6-19-73	DRAWN BY GWP	
CHANGE NO.	DATE	DESCRIPTION				CHECKED MXP	DATE 6-15-73

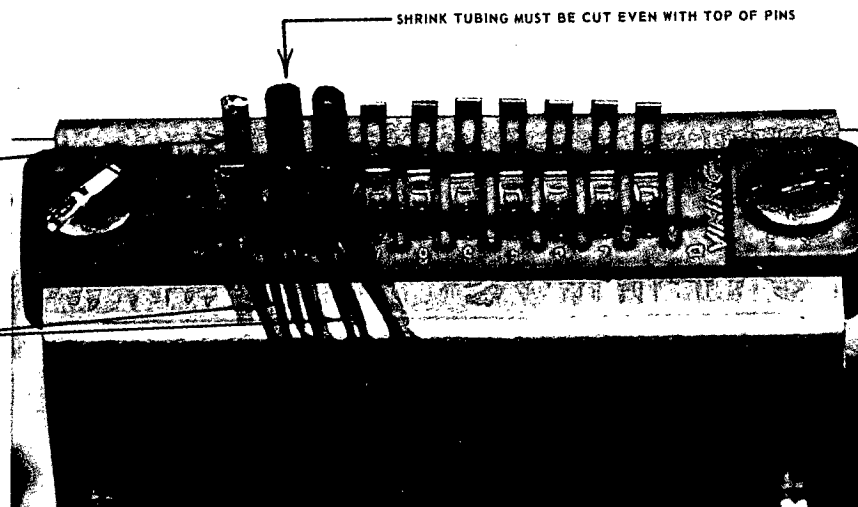


COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI			MACROMODULAR PROJECT				
			TITLE PC BOARD WIRING				
			APPROVED			ENG MLP	DRAWING NO. 309-10
			BY <i>RJA</i>	FOR PROD	DATE 6-19-73	DRAWN BY GWP	
			CHANGE NO.	DATE	DESCRIPTION	CHECKED <i>MLP</i>	DATE 6-15-73

SHRINK TUBING MUST BE CUT EVEN WITH TOP OF PINS

AFTER SOLDERING WIRES MUST BE PLACED DOWN THE PIN AND BROUGHT OUT LYING FLAT ON THE CONNECTOR

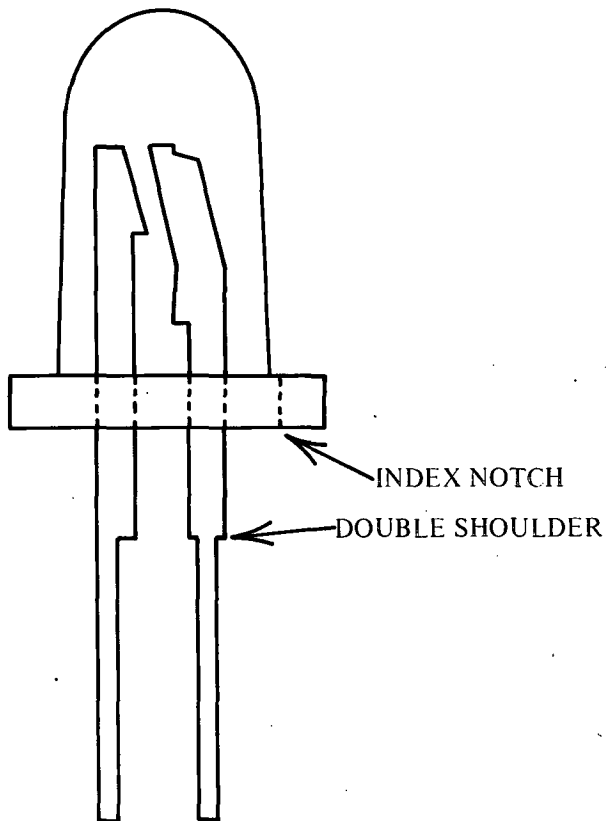
WIRES FROM PINS ON ROW B MUST BE PLACED BETWEEN PINS ON ROW A.



NOTE:

WHEN SOLDERING CARE MUST BE TAKEN NOT TO INJURE THE WIRE INSULATION PLACED BETWEEN THE PINS ON ROW A.

				COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE VIKING CONNECTOR: WIRING INSTRUCTIONS			
ISSUE	6-15-73		RJA	APPROVED BY FOR DATE RJA PROD 6-19-73			ENG. MLP	DRAWING NO. 309-11	
							DRAWN BY DLS		
CHANGE NO.	DATE	DESCRIPTION		MACROMODULAR PROJECT			CHECKED VMX P	DATE 6-15-73	



COMPUTER SYSTEMS LABORATORY
 WASHINGTON UNIVERSITY
 ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TITLE

LED ORIENTATION

Issue	6-15-73	RJA	APPROVED			ENG MLP	DRAWING NO. 309-12
			BY RJA	FOR PROD	DATE 6-19-73	DRAWN BY MAC	
CHANGE NO.	DATE	DESCRIPTION				CHECKED MLP	DATE 6-15-73

CWIRE LIST FOR COAXICONS
C

>>>>>>>>>>>>>>>>
3G15 [BLUE
>>>>>>>>>>>>>>>>
3G14 [BLUE
>>>>>>>>>>>>>>>>
3G13 [BLUE
>>>>>>>>>>>>>>>>
2G1 [BLUE
1G1 [WHITE
>>>>>>>>>>>>>>>>
2G7 [ORANGE
1G7 [YELLOW
>>>>>>>>>>>>>>>>
2G4 [BROWN
1G4 [WHITE
>>>>>>>>>>>>>>>>
2G10 [ORANGE
1G10 [RED
>>>>>>>>>>>>>>>>
2G13 [SLATE
1G13 [RED
>>>>>>>>>>>>>>>>
3G12 [BLUE
>>>>>>>>>>>>>>>>
3G11 [BLUE
>>>>>>>>>>>>>>>>
1G12 [RED
2G12 [BROWN
>>>>>>>>>>>>>>>>
1G15 [YELLOW
2G15 [ORANGE
>>>>>>>>>>>>>>>>
1G9 [RED
2G9 [BLUE
>>>>>>>>>>>>>>>>
1G6 [YELLOW
2G6 [BLUE
>>>>>>>>>>>>>>>>
3G10 [BLUE
>>>>>>>>>>>>>>>>
1G3 [WHITE
2G3 [GREEN
>>>>>>>>>>>>>>>>
1G11 [RED
2G11 [GREEN
>>>>>>>>>>>>>>>>
1G14 [YELLOW
2G14 [BLUE
>>>>>>>>>>>>>>>>
1G8 [YELLOW
2G8 [GREEN
>>>>>>>>>>>>>>>>
1G5 [WHITE
2G5 [SLATE
>>>>>>>>>>>>>>>>

CHG	E.C.O.	DATE	APPR
Issue	—	6-15-73	RJA

WIRE LIST FOR CIRCUIT BOARD HOLES

[

[illegible]

[

CH-LIST

CHG.	E.C.O.	DATE	APPR.
Issue	---	6-15-73	RJA

WIRE LIST FOR VIKING CONNECTOR

[

[illegible]

2AV [WHITE

2BV [BLUE

>>>>>>>>>>>>>>>>

1AV [VIOLET

1BV [ORANGE

>>>>>>>>>>>>>>>>>>>

7AV C YELLOW

7BV C BLUE

[illegible]

4AV C YELLOW

4BV C BROWN

>>>>>>>>>>>>>>>>>>

3AV C RED

3BV C SLATE

>>>>>>>>>>>>>>>>>

8AV [WHITE

8BV C SLATE

[illegible]

9BV [BLUE

9AV [WHITE

>>>>>>>>>>>>>>>>>>

10BV C GREEN

10AV C WHITE

[illegible]

5AV C YELLOW

[illegible]

5BV [YELLOW

>>>>>>>>>>>>>>>>>>

[

CV-LIST

CHG.	E.C.O.	DATE	APPR.
Issue	_____	6-15-73	<i>RJA</i>


```
#>>>>>>>>>>>>
15A3
7AV C YELLOW

#16A3
7BV C BLUE

#>>>>>>>>>>>>
17A3
10H CBLUE

#>>>>>>>>>>>>
18A3
15H CBLUE

#>>>>>>>>>>>>
19A3
19H CBLUE

#>>>>>>>>>>>>
20A3
6H CBLUE

#>>>>>>>>>>>>
21A3
7H CBLUE

#>>>>>>>>>>>>
22A3
20H CBLUE

#>>>>>>>>>>>>
23A3
11H CBLUE

#>>>>>>>>>>>>
24A3
16H CBLUE

#>>>>>>>>>>>>
25A3
2H CBLUE

#>>>>>>>>>>>>
26A3
1H CBLUE

#>>>>>>>>>>>>
27A3
4AV C YELLOW

#28A3
48V C BROWN

#>>>>>>>>>>>>
29A3
3AV C RED
```


FPT9WL.3 LN=163

```
#      30A3  
      38V [ SLATE  
  
#      >>>>>>>>>>>>>>>>  
      31A3  
      3G15 [ BLUE  
  
#      >>>>>>>>>>>>>>>>  
      32A3  
      3G14 [ BLUE  
  
#      >>>>>>>>>>>>>>>>  
      33A3  
      8AV [ WHITE  
  
#      34A3  
      8BV [ SLATE  
  
#      >>>>>>>>>>>>>>>>  
      35A3  
      2S1 [BLUE  
  
#      >>>>>>>>>>>>>>>>  
      36A3  
      3G13 [ BLUE  
  
#      >>>>>>>>>>>>>>>>  
      37A3  
      24H [BLUE  
  
#      >>>>>>>>>>>>>>>>  
      38A3  
      23H [BLUE  
  
#      >>>>>>>>>>>>>>>>  
      39A3  
      2G1 [ BLUE  
  
#      40A3  
      1G1 [ WHITE  
  
#      >>>>>>>>>>>>>>>>  
      41A3  
      2G7 [ ORANGE  
  
#      42A3  
      1G7 [ YELLOW  
  
#      >>>>>>>>>>>>>>>>  
      43A3  
      2G4 [ BROWN  
  
#      44A3  
      1G4 [ WHITE  
  
#      >>>>>>>>>>>>>>>>
```

FPT9WL,4 LN=254

```
# 45A3
2G10 [ ORANGE

# 46A3
1G10 [ RED

# >>>>>>>>>>>>>>>>
47A3
2G13 [ SLATE

# 48A3
1G13 [ RED

# >>>>>>>>>>>>>>>>
49A3
3G12 [ BLUE

# >>>>>>>>>>>>>>>>
50A3
3G11 [ BLUE

# >>>>>>>>>>>>>>>>
51A3
1G12 [ RED

# 52A3
2G12 [ BROWN

# >>>>>>>>>>>>>>>>
53A3
1G15 [ YELLOW

# 54A3
2G15 [ ORANGE

# >>>>>>>>>>>>>>>>
55A3
1G9 [ RED

# 56A3
2G9 [ BLUE

# >>>>>>>>>>>>>>>>
57A3
1G6 [ YELLOW

# 58A3
2G6 [ BLUE

# >>>>>>>>>>>>>>>>
59A3
3G10 [ BLUE

# >>>>>>>>>>>>>>>>
60A3 [NO CONNECTION

# >>>>>>>>>>>>>>>>
```

```
#
61A3
1G3 C WHITE

#
62A3
2G3 C GREEN

#
>>>>>>>>>>>>>>>
63A3
9BV C BLUE

#
64A3
9AV C WHITE

#
>>>>>>>>>>>>>>>
65A3
10BV C GREEN

#
66A3
10AV C WHITE

#
>>>>>>>>>>>>>>>
67A3
1G11 C RED

#
68A3
2G11 C GREEN

#
>>>>>>>>>>>>>>>
69A3
1G14 C YELLOW

#
70A3
2G14 C BLUE

#
>>>>>>>>>>>>>>>
71A3
1G8 C YELLOW

#
72A3
2G8 C GREEN

#
>>>>>>>>>>>>>>>
73A3
1G5 C WHITE

#
74A3
2G5 C SLATE

#
>>>>>>>>>>>>>>>
75A3
1G2 C WHITE

#
76A3
2G2 C ORANGE

#
>>>>>>>>>>>>>>>
```

309-22

```
77A3  
14H CBLUE  
5AV C YELLOW  
5BV C YELLOW  
  
#  
>>>>>>>>>>>>  
78A3      [NO CONNECTION  
  
#  
>>>>>>>>>>>>  
79A3  
3G9 C BLUE  
  
#  
>>>>>>>>>>>>  
80A3  
3G8 C BLUE  
  
#  
>>>>>>>>>>>>  
[TWO WIRES ARE SOLDERED TO PIN 81A3  
81A3  
1S1 CYELLOW  
3H CBLUE  
  
#  
>>>>>>>>>>>>  
82A3  
3G7 C BLUE  
  
#  
>>>>>>>>>>>>  
83A3  
3G6 C BLUE  
  
#  
>>>>>>>>>>>>  
84A3  
3G5 C BLUE  
  
#  
>>>>>>>>>>>>  
85A3  
3G4 C BLUE  
  
#  
>>>>>>>>>>>>  
86A3  
3G3 C BLUE  
  
#  
>>>>>>>>>>>>  
87A3  
3G2 C BLUE  
  
#  
>>>>>>>>>>>>  
88A3  
3G1 C BLUE  
  
#  
>>>>>>>>>>>>  
89A3      [NO CONNECTION  
  
#  
90A3      [NO CONNECTION  
  
#  
>>>>>>>>>>>>  
LEPT9WL
```

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY

310

TYPE 10 FACEPLATE BOX

PAGE	TITLE	CHANGE
310-1	Title Page	ISSUE
310-2	Parts List	
310-3 thru 310-5	Introduction - Assembly Procedures	
310-6	Type 10 Faceplate Box Assembly	
310-7	Type 10 Faceplate Sub-subassembly Front View	
310-8	Type 10 Faceplate Sub-subassembly Rear View	
310-9	Wiring Instructions: Viking Connectors F1, F2	
310-10	Type 10 Faceplate-connector Orientation	
310-11	Type 10 FPB Rear Connector Block Assemblies	
310-12 thru 310-24	Type 10 FPB Wiring List	

CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.
Issue	-----	5-29-73	RJA								

TYPE 10 FACEPLATE BOX
PARTS LIST

QTY.	C.S.L. DOC.	PART									
2	300.0	FPB Rear Connector									
1	300.2	2 Cell FPB Shell									
2	300.5-2	FPB Connector Bracket									
6	300.5-3	Connector Bracket Screws									
24	300.5-4	Astro Standoff									
1	300.5-5	FPB Key									
1	300.5-6	V-Bus Subassembly									
2	300.5-19	Connector Strut Type 1									
2	300.5-20	Connector Strut Type 2									
4	300.5-21	Strut Cover									
1	300.5-22	Interlock Pin									
1	300.5-23	Type 10 Filler Strip									
1	300.5-24	Type 10 FPB Overlay									
1	300.5-25	Type 10 Faceplate									
6	-----	Astro 348-7012-1 Connector									
2	-----	Viking Connector No. 3VH10/1JN5									
4	-----	Switches CK7101 with Lock Nuts and Lock Washers									
2	-----	Monsanto No. MV5023 Light Emitting Diodes with Mounting Hardware									
4	-----	4-40 x 3/8 Binder Head Screw									
68	-----	2-56 x 3/16 Fillister Head S.S. Machine Screws									
6	-----	H.H. Smith No. 1412-4 Locking Terminal Lug									
—	-----	Wire (See 301-10 ff for Color Code)									
—	-----	1/16 inch Shrink Tubing									
222	-----	Astro Male Contacts									
2	-----	Viking Polarizing Key No. 091-0071-000									
CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.	CHG.	E.C.O.	DATE	APPR.
Issue	-----	5-29-73	RJA								

MACROMODULAR SYSTEMS PROJECT

INTRODUCTION

This document (310) describes the assembly of the Type 10 Faceplate Box. A summary list of all required parts, including subassemblies specified in other documents, is given on page 310-2.

The general specification on wire preparation and wiring procedures (CSL Document 300.0) must be followed together with the color code information supplied by the wire lists for the Type 10. FPB. (Pages 310-12 thru 310-24).

ASSEMBLY PROCEDURES

A. Type 10 Faceplate Sub-subassembly

1. Install a Viking Polarizing key between pins 8 and 9 in each of the Viking connectors (No. 3VH10/1JN5) as shown in drawing No. 310-7. Mount Viking Connectors onto a Type 1 and Type 2 Connector Strut as shown in drawing Nos. 310-8 and 310-10, using 4-40 x 3/8 screws. (Note the orientation of struts and connectors.) Mount Strut Covers (part No. 300.5-21) using two 2-56 x 3/16 screws for each cover. (See drawing Nos. 310-10 and 310-8.) Place the Interlock Pin (part No. 300.5-22) into the two Type 2 Connector Struts. (See drawing No. 310-8). Mount assemblies onto Type 10 Faceplate using 2-56 x 3/16 screws as shown in drawing No. 310-7.
2. Mount Astro Standoffs (part No. 300.5-4) onto Type 10 Faceplate (part No. 300.5-25) using 2-56 x 3/16 screws (see drawing No. 310-10). Apply a small quantity of Locktite to each of these screws before assembly and tighten firmly. Mount Astro Connectors No. 348-7012-1 and ground lugs on to Astro Standoffs using 2-56 x 3/16 screws. (See drawing No. 310-8 for correct orientation of ground lugs and connectors).

CHG.	E.C.O.	DATE	APPR.
Issue	—	5-29-73	RJA

3. Thread switches (No. CK7101) with lock nuts and lock washers into Type 10 Faceplate as shown in drawings 310-8 and 310-10. Switch lever must protude approximately .130 inch. (See drawing No. 310-7). Securely tighten the lock nut and washer against the Type 10 faceplate. At this time check for free operation of switches.
4. Remove the backing from the Type 10 Faceplate Overlay (part No. 300.5-24) exposing the adhesive. Place on Type 10 Faceplate as shown in drawing No. 310-6, carefully aligning all holes.
5. Two LED retention flanges should now be pressed by hand into the specified holes (drawing No. 310-6) with the flanges to the front. The two LEDs shall then be inserted into the retention flanges from the rear until they snap securely into place, with Pin 1 and Pin 2 aligned horizontally. Pin 1, or the double shouldered lead, shall be placed on the left side of the Type 10 Faceplate as viewed from the front. The next step is to press on the rear locking ring. This is done by centering it over the rear of the retention flange and pressing straight down until the ring touches the metal surface. (Notice the locking ring is tapered. The ring must be installed with the large end down toward the metal.)

B. Type 10 FPB Interwiring Sub-subassembly

1. Connectors D1, D2, D3, D4, D5, D6
Following the Type 10 FPB Wiring List, crimp the wire pairs in the Astro 348 male contacts and insert the contacts into the Astro 348 connector following the directions supplied with the connectors. Terminate the free end of these wires to their respective terminals on connectors A3 and A5. Connectors A3 and A5 are not as yet mechanically attached to any mounting hardware.

C. Connector F1 and F2

1. Following the Type 10 FPB wiring list interconnect F1, F2, A3 and A5. Drawing No. 310-9 indicates the correct method of wiring to and insulating terminals and connectors F1 and F2.

CHG.	E.C.O.	DATE	APPR.
Issue	-----	5-29-73	RJA

2. All unused pins of F1, F2, A3 and A5 must be covered with shrink tubing.

D. Light Emitting Diodes L1 and L2

1. Following the Type 10 FPB Wiring List, wire wrap and solder to LED terminals then cover with shrink tubing and wire to the FPB Rear Connector A5 and to Astro Connector D6. Note that 1L1 and 1L2 (Double Shouldered Pins) are tied together and a single wire then goes to D6. Note orientation on drawing No. 310-8.

E. Switches S1, S2, S3, S4

1. Following the Type 10 FPB Wiring List, wire Switches to the FPB Rear Connectors A3 and A5. See drawing No. 310-8 for orientation.

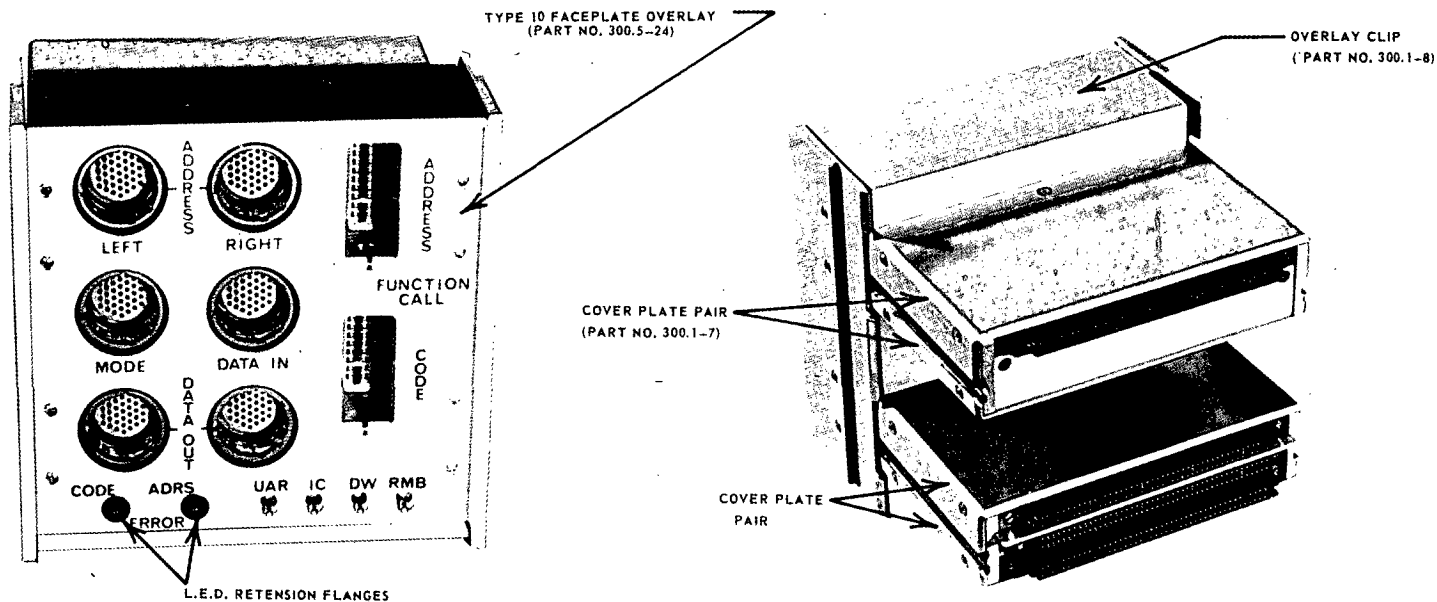
F. Assembly of Rear Connectors A3 and A5

1. Slip the FPB Key onto the V-bus Subassembly Connector Brackets and mount the FPB Rear Connector A5 using two Connector Bracket Screws. Note the orientation on drawing No. 310-11.
2. Mount Connector A3 and Type 10 Filler Strip to Connector Brackets (part No. 300.5-2.) See drawing No. 310-11.

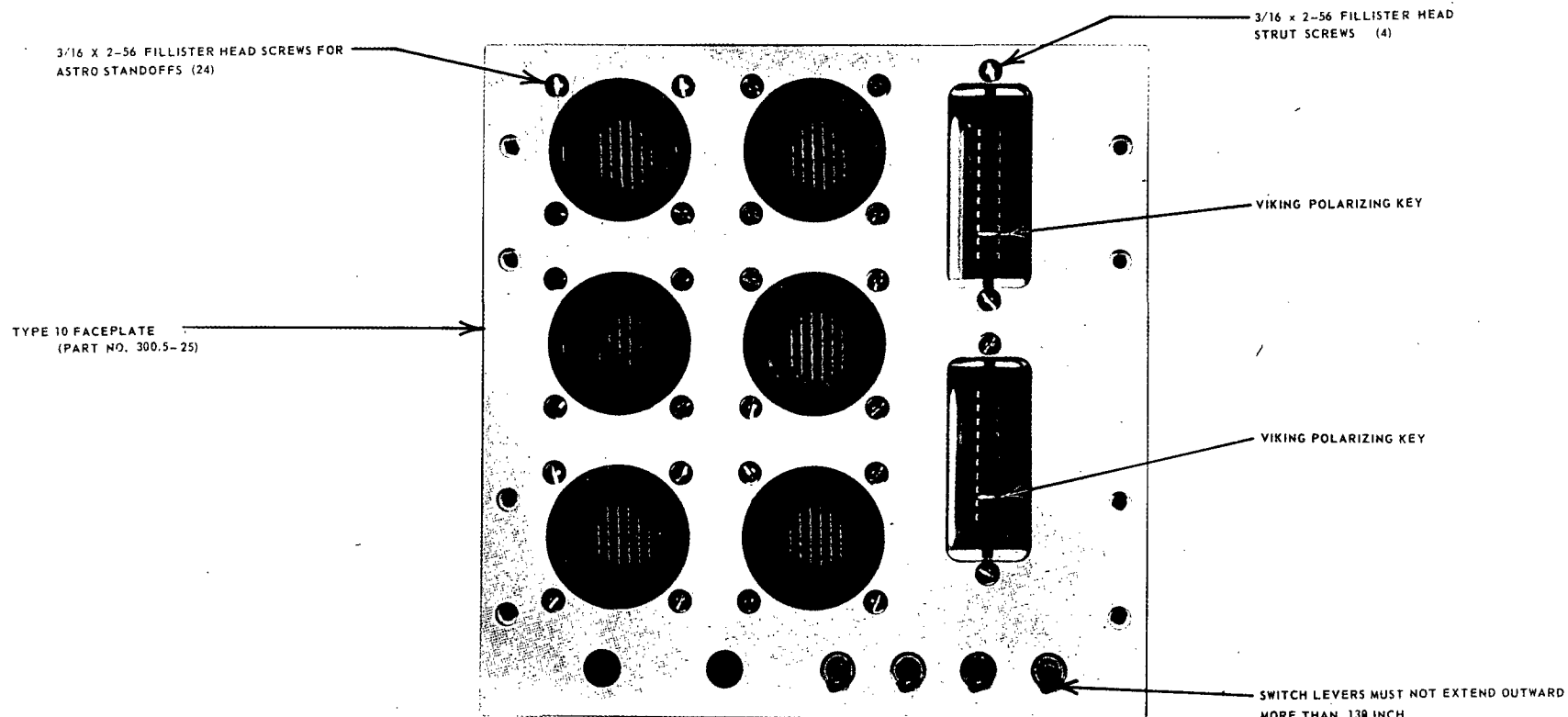
G. Final Assembly (See page 310-6)

1. Remove the screws holding the topmost and bottommost Cover Plate pair to the 2-cell FPB Shell Struts. Remove these Cover Plates with their respective Overlay Clips.
2. Slip the Rear Connector Blocks of the two connector assemblies into the slot provided in the Struts for the Connector Bracket. See drawing No. 310-11. Replace Cover Plate pair and attach the Type 10 Faceplate to front using the remaining 2-56 screws.
3. Take care to assure that the wires are not pinched in this assembly.

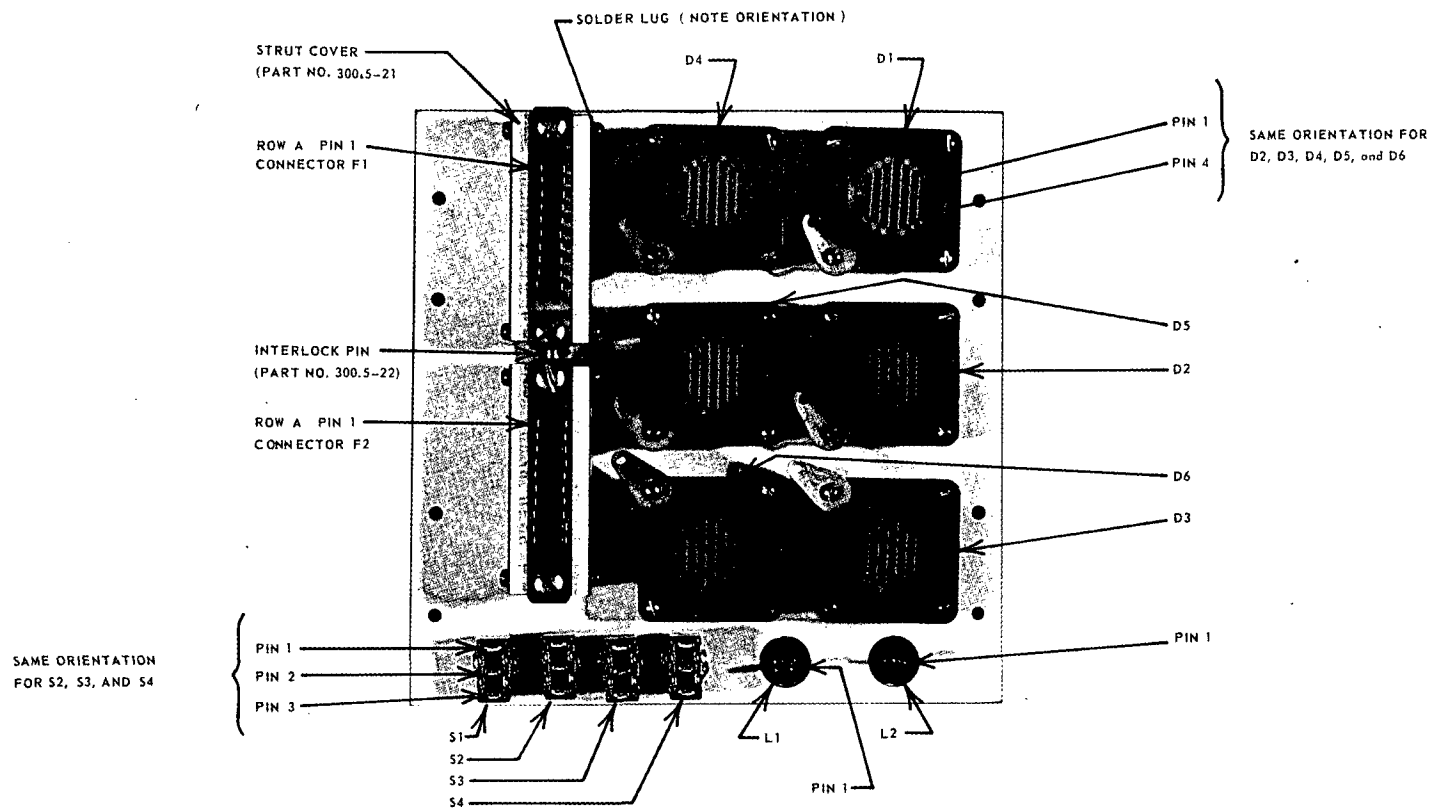
CHG.	E.C.D.	DATE	APPR.
Issue	----	5-29-73	RJA



		COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE			
				TYPE 10 FPB ASSEMBLY			
ISSUE	6-3-73	RJA	APPROVED BY <i>RJA</i> FOR PROD DATE <i>6-10-73</i>			ENG. ADR DRAWN BY DLS	DRAWING NO. 310-6
CHANGE NO.	DATE		DESCRIPTION	MACROMODULAR PROJECT			CHECKED <i>LBK</i>



				COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE TYPE 10 FACEPLATE SUB-SUBASSEMBLY FRONT VIEW				
						APPROVED			ENG. ADR	DRAWING NO. 310-7
						BY RJA	FOR PROD	DATE 6-20-73	DRAWN BY DLS	
CHANGE NO.	DATE	DESCRIPTION		MACROMODULAR PROJECT					CHECKED ADR	DATE 6-3-73

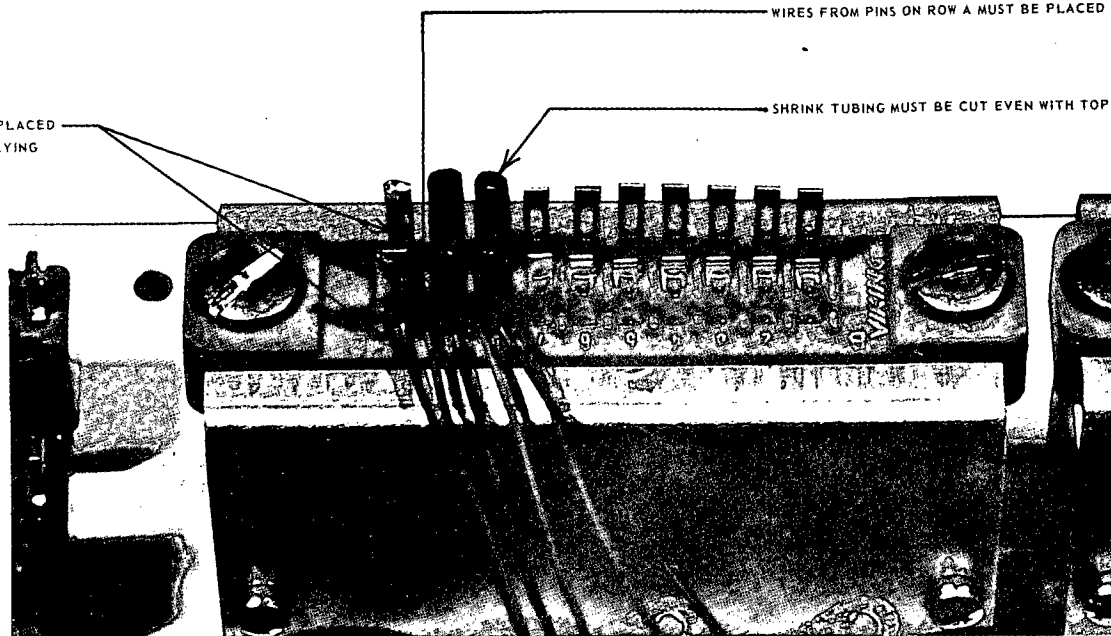


		COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE TYPE 10 FACEPLATE SUB-SUBASSEMBLY REAR VIEW			
				APPROVED BY <i>RJA</i> FOR PROD DATE <i>6-20-73</i>		ENG. ADR DRAWN BY DLS	DRAWING NO. 310-8
CHANGE NO. DATE	DESCRIPTION	MACROMODULAR PROJECT		CHECKED <i>ADR</i>		DATE 6-6-73	

AFTER SOLDERING WIRES MUST BE PLACED
DOWN THE PIN AND BROUGHT OUT LYING
FLAT ON THE CONNECTOR

WIRES FROM PINS ON ROW A MUST BE PLACED BETWEEN PINS ON ROW B

SHRINK TUBING MUST BE CUT EVEN WITH TOP OF PINS



NOTE:
WHEN SOLDERING CARE MUST BE TAKEN NOT TO INJURE THE WIRE INSULATION PLACED BETWEEN THE PINS ON ROW B.

A SOLUTION WOULD BE TO SOLDER WIRES ON ROW B BEFORE PLACING WIRES BETWEEN PINS.

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TITLE

WIRING INSTRUCTIONS: VIKING CONNECTORS F1, F2

ISSUE 6-3-73

RJA

CHANGE
NO.

DATE

DESCRIPTION

APPROVED

BY

FOR

DATE

RJA

PROD

6-20-73

ENG.

ADR

DRAWN BY

PLL

CHECKED

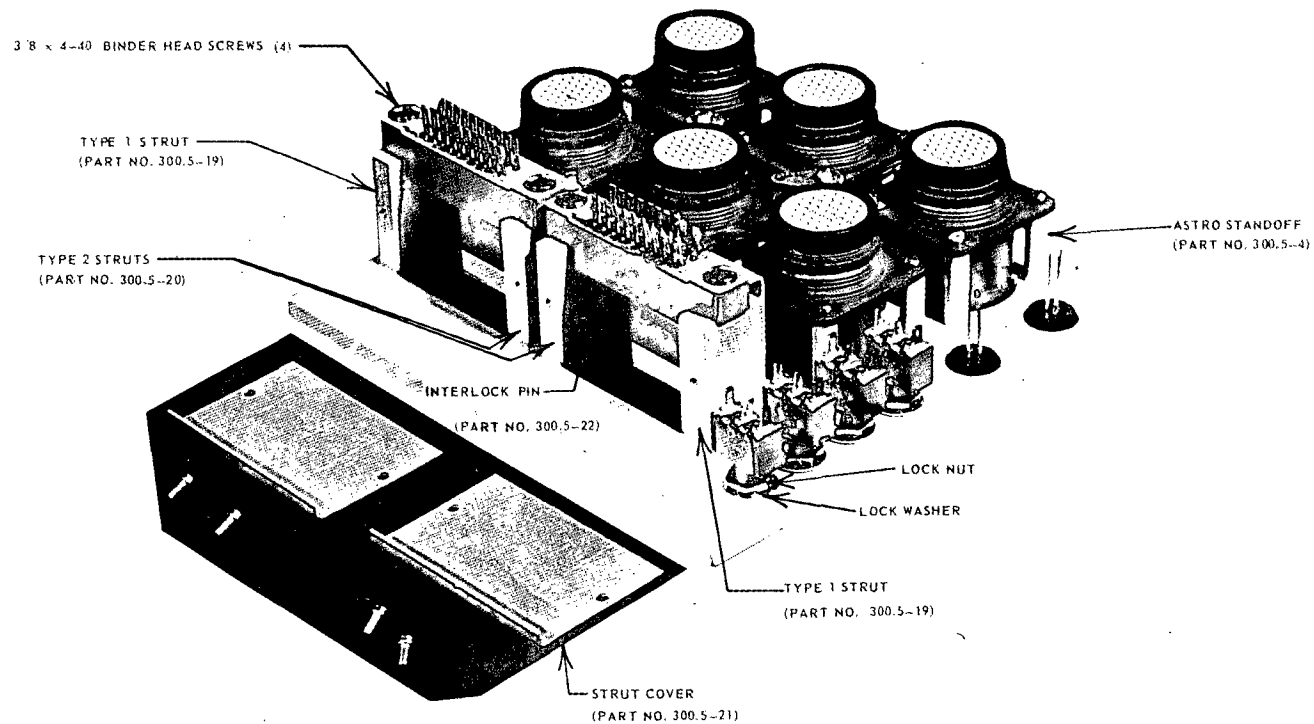
ADR

DRAWING NO.

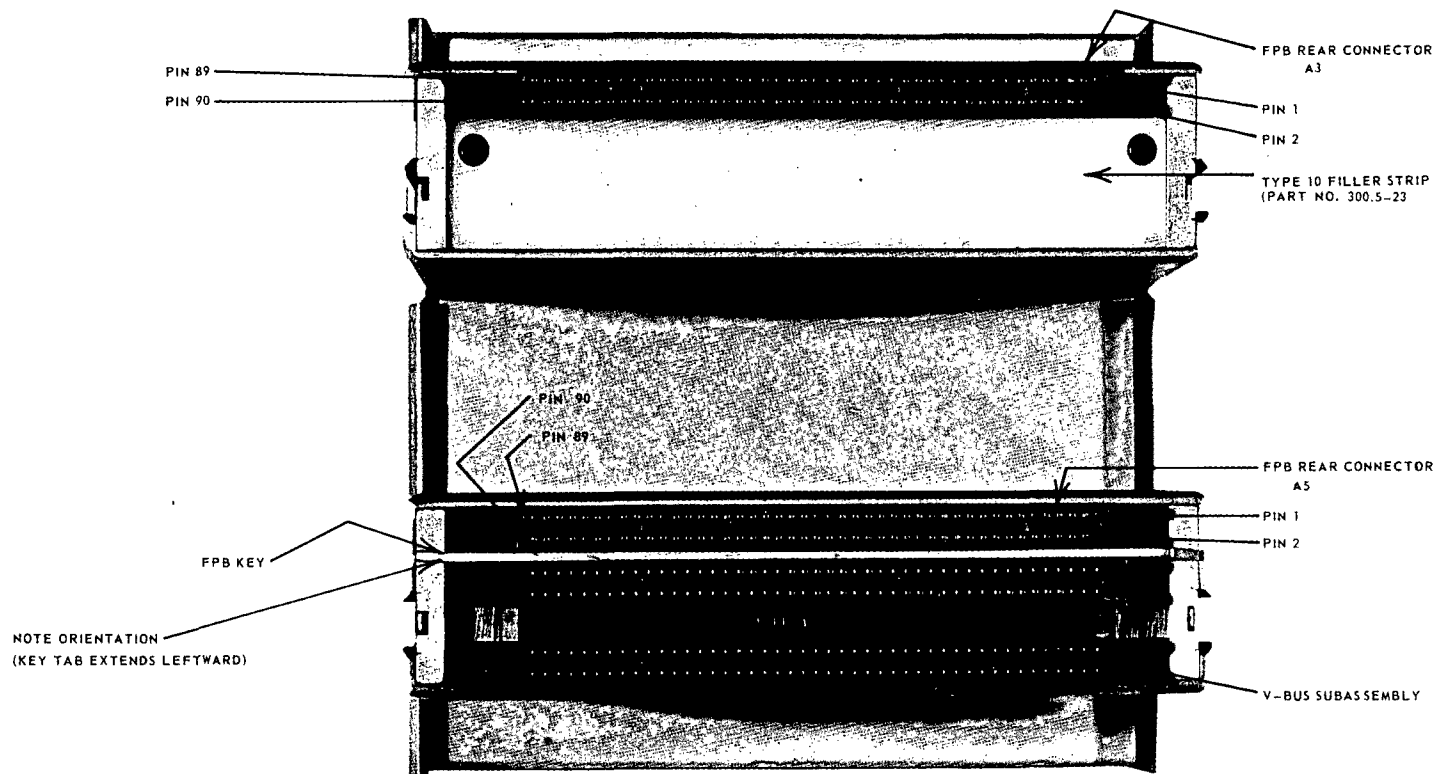
310-9

DATE

6-3-73



		COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE			
				TYPE 10 FACEPLATE - CONNECTOR ORIENTATION			
ISSUE	6-3-73	RJA	APPROVED			ENG.	DRAWING NO.
			BY	FOR	DATE	ADR	
			RJA	PROD	6-20-73	DRAWN BY	310-10
						DLS	
CHANGE NO.	DATE	DESCRIPTION				CHECKED	DATE
						ABK	5-3-73



		COMPUTER SYSTEMS LABORATORY WASHINGTON UNIVERSITY ST. LOUIS, MISSOURI		TITLE				
				TYPE 10 FPB REAR CONNECTOR BLOCK ASSEMBLIES				
ISSUE	6-3-73	RJA		APPROVED			ENG. ADR	DRAWING NO. 310-11
CHANGE NO.	DATE			BY	FOR	DATE	DRAWN BY	
		RJA	PROD	6-20-73	DLS	CHECKED	DATE	6-3-73
DESCRIPTION		MACROMODULAR PROJECT				ADR		

E TYPE TEN FACEPLATE BOX WIRING LIST

[[[

[illegible]

#

1A3
3AF1C RED

#

5A3 C TWO WIRES
3BF1C SLATE

#

>>>>>>>>>>>>>>>

2A3
2AF1C WHITE

#

5A3 TWO WIRES
2BF1C BLUE

#

>>>>>>>>>>>>>

3A3
5AF1C WHITE

#

6A3 TWO WIRES
5BF1C GREEN

#

[illegible]

4A3
4AF1C YELLOW

#

6A3 [TWO WIRES
4BF1C BROWN

#

[illegible]

C

2 TWO WIRES ARE SOLDERED TO PIN 7A3

7A3
2BF1C BLUE
2BF2C BLUE

井

[illegible]

□

THREE SIX INCH WIRES WITH GROUND LUGS SOLDERED TO PIN 8A3

□

8A3
D1
~~D2~~

#

[illegible]

9A3
1904 C BLUE

#

10A3
18D4 C VIOLET

✻

[illegible]

CHG.	E.C.O.	DATE	APPR
Issue	---	5-29-73	RJA


```
#      11A3  
      19D1 C BLUE  
  
#      12A3  
      18D1 C VIOLET  
  
#      >>>>>>>>>>>>>>>  
      13A3  
      6D4 C VIOLET  
  
#      14A3  
      7D4 C ORANGE  
  
#      >>>>>>>>>>>>>>>  
      15A3  
      6D1 C VIOLET  
  
#      16A3  
      7D1 C ORANGE  
  
#      >>>>>>>>>>>>>>>  
      17A3  
      37D6 C ORANGE  
  
#      18A3  
      36D6 C YELLOW  
  
#      >>>>>>>>>>>>>>>  
      19A3  
      37D3 C ORANGE  
  
#      20A3  
      36D3 C YELLOW  
  
#      >>>>>>>>>>>>>>>  
      21A3  
      31D6 C SLATE  
  
#      22A3  
      30D6 C YELLOW  
  
#      >>>>>>>>>>>>>>>  
      23A3  
      31D3 C SLATE  
  
#      24A3  
      30D3 C YELLOW  
  
#      >>>>>>>>>>>>>>>  
      25A3  
      24D6 C ORANGE  
  
#      26A3  
      23D6 C RED  
  
#      >>>>>>>>>>>>>>>  
      27A3
```

[illegible]

```
#
44A3
20D3 C YELLOW
#
>>>>>>>>>>>>
45A3
16D6 C YELLOW
#
46A3
17D6 C GREEN
#
>>>>>>>>>>>>
47A3
16D3 C YELLOW
#
48A3
17D3 C GREEN
#
>>>>>>>>>>>>
49A3
11D6 C BROWN
#
50A3
10D6 C WHITE
#
>>>>>>>>>>>>
51A3
11D3 C BROWN
#
52A3
10D3 C WHITE
#
>>>>>>>>>>>>
53A3
13D6 C GREEN
#
54A3
12D6 C WHITE
#
>>>>>>>>>>>>
55A3
13D3 C GREEN
#
56A3
12D3 C WHITE
#
>>>>>>>>>>>>
57A3
9D6 C ORANGE
#
58A3
8D6 C WHITE
#
>>>>>>>>>>>>
59A3
9D3 C ORANGE
#
```

FPT10WL.5 LN=345

```

    60A3
    8D3 [ WHITE
#
>>>>>>>>>>>>>>>>
    61A3
    14D6 [ RED
#
    62A3
    15D6 [ GREEN
#
>>>>>>>>>>>>>>>>
    63A3
    14D3 [ RED
#
    64A3
    15D3 [ GREEN
#
>>>>>>>>>>>>>>>>
    65A3
    36D2 [ YELLOW
#
    66A3
    37D2 [ ORANGE
#
>>>>>>>>>>>>>>>>
    67A3
    30D2 [ YELLOW
#
    68A3
    31D2 [ SLATE
#
>>>>>>>>>>>>>>>>
    69A3
    32D2 [ RED
#
    70A3
    33D2 [ BLUE
#
>>>>>>>>>>>>>>>>
    71A3
    23D2 [ RED
#
    72A3
    24D2 [ ORANGE
#
>>>>>>>>>>>>>>>>
    73A3
    19D2 [ BLUE
#
    74A3
    18D2 [ VIOLET
#
>>>>>>>>>>>>>>>>
    75A3
    6D2 [ VIOLET
#
    76A3
```

```
#      7D2 C ORANGE  
#      >>>>>>>>>>>>>>  
C  
[TEN WIRES ARE SOLDERED TO PIN 77A3  
C  
    77A3  
    5D1 C YELLOW  
    5D2 C YELLOW  
    5D3 C YELLOW  
    5D4 C YELLOW  
    5D5 C YELLOW  
    5D6 C YELLOW  
    1L1 [NOTE-DOUBLE SHOULDER  
    1L2 [NOTE-DOUBLE SHOULDER  
    1AF1 CYELLOW  
    1AF2 CYELLOW  
#  
    >>>>>>>>>>>>>>  
C  
[THREE SIX INCH WIRES WITH GROUND LUGS SOLDER TO PIN 78A3  
C  
    78A3  
    D4  
    D5  
    D6  
#  
    >>>>>>>>>>>>>>  
    79A3  
    8BF2C SLATE  
#  
    80A3  
    8AF2C WHITE  
#  
    >>>>>>>>>>>>>>  
    81A3  
    8AF1C WHITE  
#  
    82A3  
    8BF1C SLATE  
#  
    >>>>>>>>>>>>>>  
    83A3  
    3AF2C RED  
#  
    88A3 [TWO WIRES  
    3BF2C SLATE  
#  
    >>>>>>>>>>>>>>  
    84A3  
    2AF2C WHITE  
#  
    88A3 [TWO WIRES  
    2BF2C BLUE  
#  
    >>>>>>>>>>>>>>  
    85A3
```

FPT10WL,7 LN=527

```
      5AF2C WHITE
#      90A3 [TWO WIRES
      5BF2C GREEN
#      >>>>>>>>>>>>>>>>
      86A3
      4AF2C YELLOW
#      90A3 [TWO WIRES
      4BF2C BROWN
#      >>>>>>>>>>>>>>>>
      87A3
      2S1
#      >>>>>>>>>>>>>>>>
[
[ CHAIN 89A3 TO THE FOLLOWING
[
      89A3
      3S1
      1S2
      1S3
      1S4
#      >>>>>>>>>>>>>>>>
      1A5
      7D6 [ ORANGE
#
      2A5
      6D6 [ VIOLET
#
      >>>>>>>>>>>>>>>>
      3A5
      19D6 [ BLUE
#
      4A5
      18D6 [ VIOLET
#
      >>>>>>>>>>>>>>>>
      5A5
      6D3 [ VIOLET
#
      6A5
      7D3 [ ORANGE
#
      >>>>>>>>>>>>>>>>
      7A5
      19D3 [ BLUE
#
      8A5
      18D3 [ VIOLET
#
      >>>>>>>>>>>>>>>>
      9A5
      28D4 [ SLATE
```

[illegible]

```
#
26A5
23D5 [ RED
#
>>>>>>>>>>>>
27A5
32D5 [ RED
#
28A5
33D5 [ BLUE
#
>>>>>>>>>>>>
29A5
904 [ ORANGE
#
30A5
8D4 [ WHITE
#
>>>>>>>>>>>>
31A5
15D4 [ GREEN
#
32A5
14D4 [ RED
#
>>>>>>>>>>>>
33A5
13D4 [ GREEN
#
34A5
12D4 [ WHITE
#
>>>>>>>>>>>>
35A5
11D4 [ BROWN
#
36A5
10D4 [ WHITE
#
>>>>>>>>>>>>
37A5
17D4 [ GREEN
#
38A5
16D4 [ YELLOW
#
>>>>>>>>>>>>
39A5
21D4 [ BROWN
#
40A5
20D4 [ YELLOW
#
>>>>>>>>>>>>
41A5
25D5 [ RED
#
42A5
```


(

(

```
# >>>>>>>>>>>>
59A5
33D1 C BLUE

# 
60A5
32D1 C RED

# >>>>>>>>>>>>
61A5
10D5 C WHITE

# 
62A5
11D5 C BROWN

# >>>>>>>>>>>>
63A5
13D5 C GREEN

# 
64A5
12D5 C WHITE

# >>>>>>>>>>>>
65A5
9D5 C ORANGE

# 
66A5
8D5 C WHITE

# >>>>>>>>>>>>
67A5
14D5 C RED

# 
68A5
15D5 C GREEN

# >>>>>>>>>>>>
69A5
7D5 C ORANGE

# 
70A5
6D5 C VIOLET

# >>>>>>>>>>>>
71A5
18D5 C VIOLET

# 
72A5
19D5 C BLUE

# >>>>>>>>>>>>
77A3
2L1 CNOTE SINGLE SHOULDER

# >>>>>>>>>>>>
74A5 C NO CONNECTION
```

```

>>>>>>>>>>>>
75A5
2S3
#
>>>>>>>>>>>>
76A5 [NO CONNECTION
#
>>>>>>>>>>>>
77A5 [NO CONNECTION
#
>>>>>>>>>>>>
78A5
2L2 [NOTE-SINGLE SHOULDER
#
>>>>>>>>>>>>
79A5
2S4
#
>>>>>>>>>>>>
80A5
2S2
#
>>>>>>>>>>>>
81A5
9BF1C BLUE
#
82A5
9AF1C WHITE
#
>>>>>>>>>>>>
83A5
9BF2C BLUE
#
84A5
9AF2C WHITE
#
>>>>>>>>>>>>
85A5
10AF1C WHITE
#
86A5
10BF1C GREEN
#
>>>>>>>>>>>>
87A5
10AF2C WHITE
#
88A5
10BF2C GREEN
#
>>>>>>>>>>>>
[
[THREE SIX INCH WIRES SOLDER TO PIN 89A5
[
89A5
22D1 C BLUE
22D2 C BLUE

```

```
#      22D3 C BLUE  
      >>>>>>>>>>>>  
[  
[THREE SIX INCH WIRES SOLDER TO PIN 90A5  
[  
      90A5  
      22D4 C BLUE  
      22D5 C BLUE  
      22D6 C BLUE  
  
#      >>>>>>>>>>>>  
[  
[FPT10WL
```

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)

Computer Systems Laboratory
Washington University
St. Louis, Missouri

2a. REPORT SECURITY CLASSIFICATION

UNCLASSIFIED

2b. GROUP

3. REPORT TITLE

FACEPLATE BOXES, TYPES 5 THROUGH 10

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Final Report 4/1/65 through 12/31/73

5. AUTHOR(S) (First name, middle initial, last name)

George L. Bickmore, Editor

6. REPORT DATE

February, 1974

7a. TOTAL NO. OF PAGES

87

7b. NO. OF REFS

8a. CONTRACT OR GRANT NO.

DOD (ARPA) Contract SD-302

b. PROJECT NO.

ARPA Project Code No. 655

c.

d.

9a. ORIGINATOR'S REPORT NUMBER(S)

Volume IX of Part 2

9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)

Technical Report No. 38

10. DISTRIBUTION STATEMENT

Distribution of this document is unlimited.

11. SUPPLEMENTARY NOTES

12. SPONSORING MILITARY ACTIVITY

ARPA - Information Processing
Techniques, Washington, D.C.

13. ABSTRACT

This document contains the necessary procedures and wiring lists for the assembly of Macro-Module Faceplate Box types 5 through 10.

DD FORM 1473

NOV 65

REPLACES DD FORM 1473, 1 JAN 64, WHICH IS OBSOLETE FOR ARMY USE.

UNCLASSIFIED
Security Classification

14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Macromodule Faceplate Box						

